

ECONOMIC DEVELOPMENT IN EUROPE

Preface

Economic Development in Modern Europe, published in 1933, covered the history of four leading countries during the past two centuries. The present book goes back to medieval origins, continues the analysis to the outbreak of the second World War, and includes a study of economic history in three additional countries.

An acute reviewer of the book as first published noted that the form chosen lent itself to a discussion of the interrelation of economics and politics in history. The choice of this form was deliberate, and in the present book I have consciously elaborated the discussion.

Seeking the conditions of economic development I have been forced constantly to attend to interests outside the economic sphere. Progress in the production of wealth has been found dependent on a social and political system that would stimulate activity and enterprise and would assure them their reward. Permanent improvement has been found only as economic advances were sustained by a wholesome social order, and by efficient political organization.

Much of the criticism levelled against our present economic system should be directed, in my opinion, against the governments which have been unable to make the best of it. Capitalism has its faults, but its worst fault is that it has outrun our political competence, that the complex organization which it built up and which enriched all classes is too elaborate to be understood and controlled by the ordinary voter, too delicate to face the shocks of war and unwise terms of peace.

The second World War is commonly described as a conflict between democracy and autocracy. The opposition reaches far deeper than the framework of government. The war developed from conditions in which politics and economics were inextricably intertwined; it presents the opposition not only of political

but also of social and economic systems. Democracy will win a real and lasting victory only if it shows the power and the wisdom to restore wholesome conditions of social and economic development in the countries engaged.

As I am more concerned to illustrate the vital processes of history than to provide the student with a furniture of facts I have left him to seek elsewhere a detailed narrative of economic events and an account of the recent development of some complex economic institutions of which I note the origins.

My choice of countries added to the study, again, departs from the conventional standard of importance. Spain and Ireland count for little in the economic life of the present. But I know no better way to suggest the reasons why some countries have become rich than to analyze the conditions which have made other countries poor. In history, as in medicine, much may be learned from the study of pathology. These two countries offer to the thoughtful student an impressive demonstration of the interrelation of economics not only with politics and with social groupings but with ethics as well. If the study of their development merely marks dangers to be avoided it will have served its purpose.

CLIVE DAY

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Economic Development in Europe

CHAPTER I

Medieval Agrarian: the Manor

THE ENGLISH DOMESDAY BOOK, 1086

One of the most remarkable books in the world, if one has in mind the original book itself, not a copy, is the Domesday Book of England, now preserved in the Public Record Office in London. Some twenty years after his conquest, William the Norman, seeking the data on which he could base a heavy tax, made a census of taxable persons and property in his kingdom. Imperfect in some respects, in that it omitted some of the northern counties, and for the most part omitted members of the church, who were taxed separately, yet it was extraordinarily detailed and thorough in the ground it covered, and offers a statistical summary which remained unmatched for hundreds of years in England or in other countries.

In simplified form, the results of the survey of 1086 were as follows:

Lords	10,558	4% of total
Townsmen	7,968	3
Freemen	35,474	12
Villeins	108,456	38
Bordars and cottars	89,443	32
Slaves	25,156	9
Scattering	6,187	2
	<hr/> 283,242	<hr/> 100

DENSITY OF POPULATION

Allowing for omissions in the record, and assuming families of four persons, the total population of England about the year 1100 would appear to be little over 1 million; the density of population would be between 20 and 30 to a square mile. More than two centuries later (1377), when many towns had risen to increase the figures, the density would still have been little over 50 to a square mile. Estimates applying to this later period would

make conditions in Germany about the same, and would show in France a density rising to 100 or even 150.

These figures, particularly those for the period about 1100, seem extraordinarily low when compared with those of the present day; in 1931 England had a population of about 37 million, a density of over 700 to a square mile. But these later figures have been inflated by the great growth of urban population, depending for its subsistence on world-wide trade. The English people about 1100 depended almost wholly on agriculture for a livelihood, and the population, compared with the *farm* population of even a contemporary American state, appears congested rather than sparse. The United States census distinguishes farm population from village (of which nine-tenths are said to be non-farming) and urban; and taking the crude figures of farm population and total area, the density per square mile in 1930 was roughly as follows, in states which may be used for comparison: South Carolina, 30; Vermont, 18; Iowa, 17; North Dakota, 5.

Actually there is every reason to believe that the population of England about 1100 was not far below the supporting power of the land. Ravages of recent wars, it is true, had left gaps to be filled, and the population was in fact increasing, as is attested by the division of land holdings, to be described later. The growth was slow and uneven, waiting on gradual improvement in methods of production, and was attended by the suffering and death of the weaker members of the society. From the analogy of British India and other backward countries it seems probable that enough babies were born, but that death took most of them in early childhood and that the expectation of life was extraordinarily low for all. The positive checks of the Malthusian theory were a grim reality.

FORMS OF SETTLEMENT

The mode of settlement varied in different countries, and in different parts of the same country; it was sometimes in small villages, sometimes in little hamlets, sometimes even in separate homesteads, as in the United States the farm houses are scattered about. The type which was common in central England and over much of northwestern Europe was the "heap-village," so-called because the dwellings were huddled together, apparently

without plan. The early village was itself so small that it would now be called a hamlet. It comprised perhaps ten to twenty families, with a total population under 100. As it grew in the succeeding period it attained at most the count of a few hundred.

The total area subject to a village might be pictured as a block of land some two or three miles square, comprising 3,000 to 6,000 acres. The smaller part of this, however, was under cultivation. Next to the dwellings were little garden plots, and beyond them the plowed fields which provided the greatest part of the food supply. Where conditions favored there were stretches of meadow and pasture, and patches of woodland, from which the villagers got fuel and building materials, and to which they sent their swine to forage on acorns, beech nuts, or anything else they could find.

SOCIAL CLASSES

A modern tax list would class persons only by reference to their income or property. The Domesday survey combined this grouping with another which in the Middle Ages was of like importance, distinguishing people by their social position,* particularly by the amount of liberty which they enjoyed. At the top were the lords. These may be described as over-free, for in addition to the liberties which we commonly associate with a free person they had rights over others, they were privileged. The group of townsmen (burgesses, "bourgeois"), still so small that they counted for little in the aggregate, but destined to become of outstanding importance, will be considered in the next chapter. The remainder of the population, more than nine-tenths of the whole, were workers in the fields, and of these by far the largest part, nearly eight-tenths of the whole, were something less than free. The considerable group of slaves were just what the word implies, mere chattels of their masters, lacking altogether both liberty and property. They were shrinking rapidly in number and importance at this time, and were soon to be absorbed in the great class of the part-free, the villeins, bordars, and cottars, who made up seventh-tenths of the whole and may be regarded as the most characteristic class of the agrarian Middle Ages. This class had some freedom, some property, but rights

in both respects incomplete and subject to the interference of a superior. .

SOURCE OF THE PART-FREE CLASS

A system of society like this, so different from the modern, raises naturally two questions: Why did they have it? How did it work?

Only later did men question the propriety of this system, and raise the question "why?" At the time they accepted it as perfectly natural, and indeed historically it was just that, or it would not have come to be. In bare outline the course of development appears to have been as follows. The earlier society, rooted in Roman and German origins, had included both free and slave, but no intermediate class of great numerical importance. As the protecting power of the state declined the freeman, in a period of disorder, found his "rights" to liberty and property become mere shadows, and surrendered parts of them to a lord, keeping only a remnant. Better a half loaf than no bread at all.

Slaves, on the other hand, rose as the freemen sank, and the two classes merged in the intermediate class of the part-free. Slave labor was unprofitable unless performed under the eye of the master or the compulsion of an overseer. With population dispersed as it was there was no place for the gang labor of a plantation system. The master found it profitable to give the slave some land and some time to himself; he made the slave responsible for his own upkeep, and got from him dues in labor and products which might not amount to much but which at least were net gain.

STATUS OF THE PART-FREE

At the time of the Domesday survey the merging of classes was still in process, and distinctions were not as clear cut as they later became. In this later period, say in the thirteenth century, the villeins, bordars and cottars, making up the bulk of the population, can be treated as one class, part-free.

They lacked one of the most obvious elements of freedom, the right to move about as they pleased. They and their children after them were bound to the soil; the lord had the right to pursue and capture them if they ran away. A woman of this class must

pay the lord for permission to marry, paying more if she asked to leave the lord's protection so that her "brood" would be lost to him. A male of villein birth might not enter the church without his lord's permission, for the same reason. They must pay a tax at the lord's will, the tallage (French *taille*, our word tally, from the notch cut in a stick which could then be split in two parts for a duplicate record). The lord might not kill or maim a villein, but might beat him or chain him or even sell him. This was the theory of the lawyers. In practice such abuses of personal power appear to have been exceptional. They did not pay. Protection against them was afforded by custom, if not by law. And while the law would not interfere between a lord and his dependent, it did protect the dependent against all others and in criminal law treated him practically as it did the fully free.

THE MANOR; TENURE OF LAND

All three classes, lord, free and part-free, were combined in a unit of organization, the manor. In different places and at different times the manor varied greatly in structure and operation, but in an introductory sketch it is permissible to neglect these differences, and to focus attention on characteristic features of an English manor of the period after Domesday Book, say about 1200.

Of the land comprised within the limits of a manor the most important part was, of course, the plowland, from which most of the food was derived. Just as there were three classes of persons on a manor so there were three kinds of land, held on different terms. The smaller part of the whole, say one-third to make the picture definite, was the lord's demesne, in his direct possession. He would hold the manor under some other feudal lord, and would owe services, military and other, but these matters were above and outside the manorial system. A part, commonly the smaller part of the remaining land, was held of the lord for definite dues resembling a modern rent. Finally, the remainder was unfree land, burdened with labor services and with incidents which marked the dependence of the tenant on the lord. In summary, the lord had land but no labor, tenants of the unfree land held it on condition that they worked the

lord's demesne for him, tenants of the free land were an intermediate class, with time free to work their own land.

TENURE IN VILLEINAGE

Holders of a villein tenement owed, first of all in importance, week-work, so many days a week, often three, through the year. The lord might ask for less when he had little need of labor and then in the harvest season make up the account by demanding more. He had the right, further, to demand boon-works, extra days of labor, when he pleased. It is hard to see how the villeins got their own work done, except by hiring substitutes from the smaller people on the manor, or by working for themselves after doing the lord's work; the "day" of the week-work sometimes left their time free in the afternoon.

Their rights to property were incomplete as were their rights to their time. Except as they were protected by that shadowy thing, "the custom of the manor," the lord might deprive them of their holdings, or might move a tenant from one holding to another with heavier dues. Reference has been made above to the tallage, a tax at the will of the lord. At the death of a tenant in villeinage the lord would claim the heriot, a right to a part of the decedent's goods which is supposed to look back to the time when the lord supplied an outfit without relinquishing his claim to it. The heriot was commonly the best beast of the villein, but on some manors was extended to cover a considerable part, even one-third, of his personal property. In anticipation of measures employed to evade the present-day inheritance tax, John Le Lef, on a certain manor, was found guilty of selling his best animal during his last illness with intent to defraud the Abbot, his lord.

At the death of a tenant in villeinage the land passed to the widow, and if there were no widow often to the youngest, not to the eldest son. This system of inheritance, ultimogeniture as opposed to the primogeniture on free land, suited conditions in that it kept the family together until all could work; if the eldest inherited he might marry and crowd out his younger brothers.

CLASSES AMONG PART-FREE TENANTS

The dues of the villein tenants, described in the previous section, would make their position seem by no means enviable, yet

they were in a sense the aristocracy of the part-free class. If the dues were heavy means were provided to meet them, for in general all the villeins were supposed to have family holdings of about 30 acres of plowland each. This general equality of economic position, so different from the infinite variety which has prevailed in the later period, and suggesting some likeness to socialistic or communistic ideals, was found on the Continent as well as in England, and has raised interesting questions, still unsettled, as to its origin. In the period after Domesday the equality was disappearing. The normal holding of 30 acres was supposed to be indivisible, but was in fact breaking into fragments, into halves and quarters and even smaller fractions. Some villein tenants came to hold but a small part of what their ancestors had held, while others, like the *kulaks* of recent Russia, combined fragments and held more than the normal share.

The bordars of Domesday Book are supposed to have held fractional parts, perhaps five or ten acres, of the full share of plowland, while the cottars, then and later, held no plowland or indeed means to plow if they had held it, and had only the cottage lot from which their name was derived, and a plot of garden land in addition. To make a living they had to work for others, seeking employment with either free or bond, and acting as substitutes in performing labor services due to the lord. Within the group, which has sometimes been pictured as starting in an ideal village community, in which all were free and equal, there were already the contrasts of free and bond, rich and poor, employer and employed.

Labor due to the lord depended on the land held, not on the personal condition, free or unfree; a freeman, with rights to leave the manor or give his daughter in marriage as he pleased, might hold unfree land, and would owe the services due from it, whether he rendered them in his own person or hired a substitute to perform them. In general the amount of service varied with the amount of land held, and the cottagers, holding no plowland, escaped with relatively light burdens, shading down to those of a certain Edith, who was bound to carry drinking water to the reapers. In addition to labor services the servile tenants were commonly bound to specified payments in kind, perhaps some fowls at Christmas and some eggs at Easter.

THE OPEN-FIELD SYSTEM

The student who has faced the contrast with our present system in the medieval variety of classes and of land tenure has still another contrast to note in the physical distribution of the land holdings. Over large parts of Europe land was held, not in separate blocks, like American farms, each set apart for the individual tenant, but in intermixed strips, scattered over the whole plowland of the village. This held true not only of the 30-acre holding of the regular villein and of the fractional holdings of the lesser tenants, but even of the demesne land of the lord. The accompanying plan shows the arrangement as it still persisted in the village of Laxton, in Nottinghamshire, after 1900. The reader will note how the land of the two farms, distinguished in the plan, was scattered over the fields, and should realize that this is a very late example; in a medieval village the pieces of land making up a holding would be smaller and still more dispersed. The fragments were commonly in the form of strips, much longer than their breadth, obviously to facilitate plowing by reducing the number of turns; a common size was 40 rods by 4 (one acre) or by 2 (one-half acre), but the size and shape of the fragments often varied to suit the lay of the land. The strips were divided from each other merely by paths or bits of turf, not by fences or hedges, and on that account the arrangement is commonly called the open-field system.

Again the questions rise: Why this arrangement? How did it work? Scholars are still disputing over the answer to the first question; it leads back to a past so shadowy that one must guess as to the origin. The older theory, that it was rooted in the freedom and equality of a primitive village community, has lost ground. It seems more reasonable to ascribe the arrangement to the gradual breaking-in of land to the plow, whether done by cooperative groups or by individuals. There appears to be some correspondence between the field system and the kind of plow in use. In southern Europe, where the plow was really merely a digging stick attached to a beam, not cutting deep, and requiring cross-plowing to stir the soil, the strip system was ill-suited; land was held in separate blocks, approaching a square shape. In the north a much heavier plow was employed, with a



coulter to cut and a mouldboard to turn the sod; with such an instrument, cutting deeper, cross-plowing was unnecessary, but a larger draft team, of four or even eight oxen, was required, co-operation of a group was natural, and the strip form offered obvious advantages.

The student should note that, whatever the origin of the system, when it comes into the light of history there is absolutely no element of communal property in it. However the land lots were first distributed, they remained private holdings from one generation to another; there was never, within the period of written record, a redistribution and equalization of shares such as prevailed until recently in the Russian communal land system. Even the rights to the meadow land or hay crops, vague as they might seem, were attached to perfectly definite shares in the village arable.

FAULTS OF THE OPEN-FIELD SYSTEM

Authors have exercised their minds to discover merits in the open-field system. Their contentions (that it offered safeguards against bad farming, that it made joint tillage easier when villagers were called away to war, and so on) are not convincing. There must have been a reason for it when it was established, but in the thousand years that it lasted, in one part or another of Europe, when its operation can be studied, its effects on agriculture were almost altogether bad. One of the impressive lessons of economic history is the fact that this institution could so long direct and confine the activities of people when little or nothing could be said in its favor.

Some disadvantages are obvious: waste of land, for marking the division between strips; waste of time, when a man had to go from one to another of his strips; difficulty in raising animals because of the absence of fences. The most serious disadvantage is not quite so obvious. As it was impossible to provide a separate road to each fragment, and a man often could reach a strip of his own land only by passing over the land of others, all the people had to follow the same system of agriculture, raising the same crops at the same time and in the same way.

THE THREE-FIELD SYSTEM OF CROPPING

On an experimental farm in Rothamsted, England, wheat has been grown on the same piece of land, year after year, for over 90 years, without the application of fertilizer; and the yield, which declined steadily at first, has for many years remained nearly constant at 12½ bushels per acre. This result, due in part to the character of the particular soil, would be possible only under intensive cultivation with modern instruments. The peoples of Europe had learned, before they entered the period covered in this book, that they could assure a supply of the cereals which were the mainstay of their food only by giving the land a chance to rest between crops and by varying crops so as to make different demands on the soil from year to year. In an earlier period they had practiced a two-field system, leaving the land fallow every other year, but in the later Middle Ages, wherever the character of the soil made it practicable, they had advanced to a three-field system, leaving only one-third of the arable area out of cultivation at a time, and giving a larger acreage under crops with the same amount of plowing.

Under the three-field system the plowland of the village was divided, and in this case by permanent hedges or fences, into three parts, nearly equal. One part was used for a winter grain, such as wheat or rye, sowed in the fall and reaped the next summer; one part for a legume or cereal sowed in the early spring, illustrated by the verse still current in children's games, "oats, pease, beans and barley grow"; while the third part was left fallow, to grow up in weeds and be grazed upon by the farm animals. The succession can best be illustrated by a table.

<i>Date</i>	<i>Field I</i>	<i>Field II</i>	<i>Field III</i>
1300	Wheat	Barley, etc.	Fallow
1301	Barley, etc.	Fallow	Wheat
1302	Fallow	Wheat	Barley, etc.

LOW RETURNS OF AGRICULTURE

Wheat was by no means as important an item in the food of the people as it became later, but its yield has been most carefully studied, and offers the best index of relative efficiency. In the time of Domesday Book the yield is thought to have been about six bushels to an acre, of which two must be saved for seed, leav-

ing a net of four. Even in this time of relative stagnation the yield was rising, and is estimated in the later centuries of the Middle Ages at eight to nine bushels. Roughly, the yield was one-fourth to one-half the modern, according to the countries chosen for comparison.

This poor showing was the result of a number of factors. The crop system was overbalanced on the cereal side, and offered little opportunity to clean the land of weeds. Implements were clumsy and ineffective. The high cost of iron forced a sparing use of it, even on the plow; "and poor men have a crooked piece of wood," wrote an author at the end of the Middle Ages. Even the best plows would not cut deep, and would cover only an acre a day. A man would mow an acre a day with a scythe. Grain was cut high on the stalk with a sickle, to avoid harvesting weeds and to facilitate reaping in bad weather; five men, four to reap and one to bind, would cover only two acres a day, and the harvest might last for six weeks. Villeins and others bound to work for the lord gave their labor grudgingly for they had no incentive to efficiency; there was a never-ending conflict between them and the officials who were trying to keep them up to their work.

DEFICIENCY OF LIVE STOCK

Farm animals got but a poor living under the three-field system. They grazed on the open pasture, on the stubble after crops were harvested, and on the weeds which grew up on the fallow. Meadow land was highly prized, for the hay which it supplied was the mainstay of the farm animals during the winter. Oxen were preferred to horses because they were sturdier and cost less to keep. All the animals were undersized, by modern standards; pictures of them in medieval manuscripts make them appear diminutive. Both cows and sheep were kept for milk, but this failed through the large part of the year in which fresh grass was lacking.

The lack of good fodder and deficiency of farm animals resulted in a very meager supply of manure, and stunted both vegetable and animal growth in a vicious circle. The lord had an advantage in that he could require unfree tenants to fold their sheep on his demesne, and could move the sheepfold about to benefit parts of the land most needing it. Artificial fertilizers were of

course unknown, but in the course of time some effort was made to improve the texture of the soil by mixing marl (chalky or clayey earth) with it.

VILLAGE AND HOUSEHOLD SELF-SUFFICIENCY

Before the spread of towns through the countryside the people of each village had to produce at home pretty much all that they consumed, not only their food but the necessary industrial products as well. Iron they must import for their implements, salt for their food, stones for the mill. Large estates could afford to import more freely; on the manors of the church men were often bound to service in fetching and carrying outside.

In the earlier period the lack of a town market forced each household to supply in large part its own requirements: coarse cloth spun and woven from hemp or wool, leather and skins, household utensils shaped roughly from wood. The modern reader can scarcely imagine the strain imposed on the workers and the poverty of the result.

The rise of the towns effected a revolution in the village economy by freeing it of its former self-sufficiency, and enabling the village to purchase products which it had formerly had to produce itself or do without. The accounts of a Norfolk manor about 1300 record the importation of nails and hardware, farm implements and harness, pots, pans and buckets, cloth, cord, and so on.

SLIGHT ORGANIZATION OF LABOR

The products listed at the end of the last section were made by specialized town artisans, early counterparts of the modern manufacturer. "The division of labor is limited by the extent of the market," as Adam Smith said, and became possible only when town and country began to trade with each other. On the manor itself, in a village group of perhaps 100 people, specialization was impracticable. There was no sharp distinction even between the two sexes; men and women worked together at home and in the fields, although they might be doing different things.

The closest approach to a specialist in the village was the miller. Grinding grain in a hand mill was a laborious task, from which every people has sought to free itself as soon as possible.

Grist mills driven by water were in use in Mediterranean countries before the Christian era, and spread from there to the north. Domesday Book recorded some 5,000 mills in England, and these were doubtless all water mills. The windmill appears to have been borrowed from the Arabs a century later, and became more common on the Continent than in England.

In the ordinary manor the mill belonged to the lord, and was a profitable monopoly. It is significant that the villagers not only might but must have their grain ground there, paying a fixed proportion, one-sixteenth more or less, for the service. The theorist might argue that the lord, having provided a public utility, would fairly demand enough business to cover his overhead costs. A medieval lord would have been the last person to understand such refinement of reasoning; he had the power to impose his will, that was enough. The considerable number of hand mills, querns, which have been found, show that people sought, even at the expense of burdensome labor, to evade the costs, delays and inconveniences of the mill monopoly; so many of these have been found around manor houses that it is clear they were confiscated from the tenants.

In different places and at different times manorial lords exercised also monopoly of baking or of brewing and of hunting. In England as on the Continent the dove-cotes and rabbit warrens of the lords, maintained at the expense of the villagers' food supply, were always resented.

STANDARD OF LIFE

The term "Merry England" (*Anglia plena joci*), dating from shortly after Domesday Book, was used by an English Archdeacon to describe his country. The cheerful picture which he drew of English life at the time is not confirmed by trustworthy records, and is not accepted by modern critics. As a corrective it may be wholesome to view another picture drawn by a poet in a somewhat later period, describing the plowman's family. The man, in coarse coat and hose, his hood full of holes, his toes sticking out of worn shoes, drove before him four feeble heifers, whose every rib could be counted. His wife walked beside him, a winnowing sheet wrapped over her dress to protect her from the weather.

"She went barefoot on the ice, so that the blood flowed.
At end of strip of land was a little child covered with rags,
And two two-year olds, all crying a miserable note.
The poor man sighed and said 'Children be still.' "

If the reader asks why the children in the poem did not seek the comforts of home he must be told that these did not exist. The usual house was made of twigs woven between uprights and plastered with mud. It was commonly divided into two little rooms, of which one was as far as practicable kept free of farm animals and used for a bedroom. On the earthen floor the fire for cooking was built, but there was no chimney, and the smoke must find its way out through the door or a tiny window opening. Through the cold and darkness of a northern winter the people must live as best they could, with little heat and almost no light. They slept on bags of straw or wool, with logs for pillows. Their household goods were reduced to the barest necessities, a few agricultural implements, and household utensils of wood or earthenware which were valued in inventories at a few pence.

FOOD; LABOR

The mainstay of the food supply was coarse bread and porridge made of the cereals and of pease and beans. Most of the villagers kept fowl and swine, from which they got some animal food, and shared in the scanty milk supply. They lacked, of course, potatoes and many other vegetables now common. They had cabbage, leeks and parsley, but a modern dietitian would certainly judge their fare ill-balanced and deficient in vitamins. Their food was not only coarse and unvaried, but was often also deficient in quantity, as will be shown in the next section. Yet a considerable part of the barley crop was set aside for the brewing of ale, which in England was drunk by all classes in large quantities. It was thin, and until the end of the Middle Ages lacked the bitter of hops, but was relished presumably as an escape from the monotony of the solid food.

They worked long for what they got, in winter from daylight to dark, in other seasons from 5 or 6 A.M. to 6 or 7 or later, according to sunlight, with half an hour for breakfast and an hour and a half for dinner and rest. The rules of the church forbid-

ding labor on Sundays and holy-days were commonly broken, even by the churchmen themselves; a modern student of the subject estimates only fifteen to twenty days free of labor during the year.

FAMINES

At the present day, when the English eat bread made of wheat grown in Australia or the Argentine, it is hard to realize the narrow limits within which crops could be moved in the Middle Ages. At the time of Domesday Book great lords, owning many manors, would move about to consume the food where it was produced instead of having it brought to them. The ordinary manor had to rely upon the produce of its own soil for its subsistence; it could not supply deficiencies by trade with the outside world. With variations in the yield of crops, such as were inevitable, there was a still greater variation in the marginal utility of a unit, to borrow the phrase of theoretical economics. The surplus of a good season could be put only to unimportant uses; the lower yield of a bad year touched some people to the quick. In ordinary years the villein tenant, with the full holding of 30 acres, had more than enough food to support his family, and could afford to hire the labor of those who had only a fragment of plowland, or none at all. Even on the manor there was a proletariat, dependent on others for daily bread. When there was a long winter, with snow lying into March or April, so that plowing and sowing of the spring crop were delayed, and when this was followed by a rainy season spoiling the harvest both of Winter-sown and Spring-sown crops, the condition of the villagers became desperate and some had to go to the wall.

An author who has studied the history of the German-speaking people, extending from modern Belgium to Austria, finds that in the twelfth century (the one after Domesday Book) there were only 9 years of 100 in which famine was not reported from some part of the region. Famines were general, extending over great areas, in 1100-01, 1124-26, 1145-47, 1150-51, 1195-98. The contemporary texts collected by this author give a dreadful picture of the straits to which people were reduced in the effort to endure.

At best the villagers had but a short expectation of life. Con-

ditions of housing, clothing and food made them an easy prey not only to our modern diseases, but to others, like leprosy and ergotism, which have now been stamped out. Famine was almost always accompanied by pestilence, probably hunger-typus, transmitted by lice, which swept away the people whose power of resistance had been lowered by lack of food.

MENTAL AND MORAL STANDARD

We have no portraits of common people of this period. The poets of the time (unlike their successors in a more recent period) described them as of repulsive appearance, with clumsy bodies and coarse and ugly features. They took little care of their persons or of their rough clothes, which were generally of wool or even of pelts, and necessarily harbored a multitude of vermin. Isolated in little hamlets, they knew little of the outside world. Knowledge and reason were subordinate to tradition and superstition. In the family relations sentiment was subordinate to practical interests. There is a record of one village woman, at the time of the Black Death, who, within the period of a couple of months, had successively three lawful husbands, the last actually a stranger.

The court rolls of the manors record an endless sequence of libels, scandals and family feuds, of which some lasted for years. Women shared with men the weapon of abusive language, and sometimes more serious weapons. Bloody quarrels were frequent, and the courts were constantly imposing fines for attacks made with knife, axe, agricultural implement or a stone. The coroners' rolls have been preserved, and give a vivid picture of crimes of violence.

JUSTIFICATION OF MANORIAL INSTITUTIONS

To offset the dark picture of manorial life drawn above it would be possible, if there were space, to add some lighter touches: on occasion rude abundance, enjoyment in village sports and festivals. It seems safer, with modern conditions in mind, both physical and psychical, to leave the contrast as drawn; the modern student is less likely to exaggerate than to underrate the advances which have been achieved.

This, at least, must be said in defense of the medieval agrarian

system, that it did preserve a society and did make possible some advance. Slavery itself marked an advance in one period of history; it was better for society to save a man, even as a chattel, than to kill him. Serfdom was an advance over slavery. Both master and man gained by a system which gave at least some rights to the latter, by custom if not by law. Freedom is never absolute and unlimited; even a modern society must guard it jealously and limit its scope lest it become an abuse. Later chapters will describe the change in conditions which made possible and natural that growth of personal freedom which stimulated activity and loosed an immense incentive to progress.

Rights to property, like those to liberty, lacked the completeness and definiteness of the present. The lord of the manor himself held his land subject to feudal service to his superiors, and even inside the manor was bound by its customs; he must follow the usual course of cultivation of crops, must after a certain date leave open his strips to pasturage of the village animals, and so on. The freeman holding free land was in a position much like that of the lord and in some respects resembled a proprietor, but if he held some unfree land he was subject to the heriot, while the man unfree in blood could also be tallaged at the will of the lord, and could not assert definitely that anything was his own. Centuries must pass before the rights of property could be refined and crystallized to resemble those of the present day, and to furnish another of the great incentives to material progress.

VARIETY OF MEDIEVAL CONDITIONS

It would be unfair to the student to close this sketch of conditions in the agrarian Middle Ages without a warning that it is a simplification of fact. In different countries at different times, in different regions of the same country at the same time, can be found such a variety of conditions as would require for description volumes rather than pages. The village as described above was the characteristic form of settlement in the English midlands, but gave place to other forms there and elsewhere in Europe. The manor under a lord was by no means universal, and when it did exist took on a multitude of shapes. Village and manor, when they did exist together, often, perhaps gen-

erally, did not coincide; a manor might embrace parts of different villages, so that the village group would be divided among different manors. The free tenants of a manor might hold also of other lords, in a tangle of liabilities; or might hold unfree land, to the confusion of status and tenure.

Even within England the variety is bewildering. Yet England was a small region, of relatively uniform physical character, and subject to the unifying influence of the strong central government which followed the Norman conquest and gave the country a common law. In all these respects the Continent offered a contrast which mirrored itself in a still greater variety of conditions and development. To particularize would be unprofitable.

With this word of warning to the student may be coupled a word of encouragement. A furniture of fact is only one of the products with which a study of history provides him. Incomplete as may be the selection of fact given him here, if it stimulates him to thoughtful consideration of the relations between facts, of the vital links which bind facts together in their flow through time, it will have contributed to the greatest service which the study of history offers—a better comprehension of the facts of the present.

QUESTIONS

What was the date of Domesday Book? What did it show as regards social classes?

What was the density of population, then and later? Compare the present.

What is the density of *farm* population in your state? (See U. S. Census.)

Why can it maintain so much higher a standard of living?

What were the area and population of a characteristic village?

What was the occupational distribution? What was the proportion of free and part-free?

Explain the origin of the part-free. From what different sources did they come?

What was the status of the part-free?

What was the tenure of land on the usual manor?

Describe the conditions of tenure in villeinage.

Distinguish classes among the part-free.

Describe the open-field system. Why was it so called?

On the map how many fragments composed farm No. 1? Farm No. 2?

20 ECONOMIC DEVELOPMENT IN EUROPE

How is the origin of the open-field system explained? Did it show communal property?

What were its merits and defects?

What was the three-field system? Trace the crop changes on a given field.

What were its advantages?

What was the yield of cereals compared with the present? Explain the difference.

Explain the deficiency in live stock. What were the results?

Explain why village and household were forced to self-sufficiency, and the results.

How did the lord of a manor exploit the needs of the people for industrial services?

Describe details indicating the standard of living: clothing, housing, food.

Why were famines inevitable? Illustrate their prevalence.

Illustrate moral and mental standards.

What can be said in justification of conditions?

READING

Suggestions under this head, in this and the following chapters, have been restricted to a small list of topics and references. The two books named below, which cover much the same field as that treated in the present volume, contain bibliographies of which some are quite elaborate; they will provide teachers with abundant material for the extension of the present list, and the authorities cited at the end of this volume may also be used for that purpose. Further extension is possible in two directions. The encyclopedias, notably the *Encyclopaedia of the Social Sciences*, contain excellent articles applicable in almost every chapter of the book. Periodical literature begins where the histories and encyclopedias leave off, and offers an indispensable source of information on contemporary conditions. The *Readers' Guide* and the *International Index*, reaching almost to date in their cumulative form of publication, offer a key to all of the popular and to some of the scientific literature.

The two books of general application, both entitled *Economic History of Europe*, are by Herbert Heaton (N. Y., 1936), and by Sheperd B. Clough and Charles W. Cole (Boston, 1941).

A standard book which can be used for reference and more advanced study is E. Lipson, *Economic History of England*, three volumes extending well into the modern period (London, 1915 ff.). References to vol. 1, "The Middle Ages," are to the seventh edition, revised and enlarged, 1937.

On the particular subject of this chapter there are two excellent books for general reading: George G. Coulton, *The Medieval Village* (Cambridge, 1925), and Henry S. Bennett, *Life on the English Manor* (Cam-

bridge, 1937); topical references below are restricted to these books. Coulton's *Medieval Panorama* (N. Y., 1938) covers a broader field. Books by Norman S. B. Gras, of which several include treatment of the subject of this chapter, are always scholarly and reliable.

The manor, general. (Clough and Cole, chap. 1, pp. 3-22; Heaton, chap. 6, pp. 91-111.)

Early development. (Coulton, chap. 2, pp. 8-24; Lipson, chap. 1, pp. 1-31.)

Manorial agriculture. (Bennett, chap. 2, pp. 39-60; Lipson, chap. 2, pp. 32-87.)

The peasant's year. (Bennett, chap. 4, pp. 75-96.)

Rents and services. (Bennett, chap. 5, pp. 97-125.)

Servile burdens. (Bennett, chap. 6, pp. 127-150; Coulton, chaps. 5, 6, pp. 44-64.)

Manorial administration. (Bennett, chap. 7, pp. 151-192.)

The manorial court. (Bennett, chap. 8, pp. 193-221; Coulton, chap. 7, pp. 65-74.)

Standard of living. (Bennett, chap. 9, pp. 223-256; Coulton, chap. 22, pp. 307-320.)

The manor and the church. (Bennett, chaps. 1, 12, pp. 27-37, 319-336; Coulton, chaps. 19-21, pp. 253-306.)

The road to freedom. (Bennett, chap. 11, pp. 275-317; Coulton, chaps. 13, 14, pp. 151-177.)

Servile revolts. (Coulton, chaps. 11, 24, 25, pp. 121-139, 345-367.)

CHAPTER II

Medieval Municipal: the Town

THE MANOR AND THE TOWN

Reviewing the outstanding features of the medieval agrarian organization, as described in the last chapter, we find the following:

In economic life, exchange was relatively insignificant. Utility, not value, guided the producer. Most goods were produced by the household which consumed them.

In social life there were marked class divisions. An hereditary class of lords did most of the ruling, judging and fighting. A class of clergy ministered to the religious needs of the people. These two classes were supported by the workers, of whom most lacked full personal freedom and full rights of property.

The political organization, to be described more in detail elsewhere, was that stage of feudalism in which money taxes were so undeveloped that a salaried administration was not possible. The functions of government were exercised by lords bound to serve as councillors, judges and warriors. Legislation, in the sense of the formulation of reasoned rules for the guidance of society, was just beginning to encroach on the field of tradition and custom.

In the present chapter we enter on a stage differing so fundamentally in all respects sketched above that it must be classed as one of the great revolutions of history—perhaps the greatest that the western world has known. The reader will not make the mistake of assuming that the passage from old to new was unprepared and abrupt. The old dies slowly; the new gains gradually in strength. At the very time of Domesday Book the towns which were destined to remake the western world were springing up and were changing conditions as they have been described in the previous chapter. Two centuries and more were

needed to make the transformation definite. Even so the word revolution seems proper if one takes into account the depth of the change.

ORIGIN AND SIGNIFICANCE OF TOWNS

The English words town (cf. German *Zaun*, hedge) and borough (cf. *Burg*, stronghold) suggest an origin in a group capable of defending itself against aggression. In a period of lawless violence the group must regard protection as a vital requisite, and sought it commonly at the hands of some lord, lay or ecclesiastic, until it was qualified to defend itself. So far there seems no distinction between town and manor. The fundamental difference lay in the fact that the town group included people—merchants and manufacturers—making their living by exchange and able to buy for the group liberties and exemptions which gave it a place apart in the life of the time. Towns multiplied and rose to greatness in just the period in which the Crusades (1095–1270), with the spread of commerce which attended them, showed the readiness of western Europe to embrace new interests and adopt new means to satisfy them.

In anticipation of details to be considered later we may note at this point the sweeping changes which the rise of the towns involved.

In economic life a system of exchange gave value to natural resources which otherwise would have been wasted, and made possible a specialization in occupation which enhanced immensely the efficiency of the producer. The exchange economy extended the range of consumable goods, increased their quantity and improved their quality, although at the same time it raised new problems of price and market regulation.

“Town air makes free” was a rule of the time. A serf who had established citizenship in a town shook off the claims of his lord. He was personally free and his children could marry as they chose; whatever property he acquired was his outright and could be bequeathed as he chose. Between the workers in the fields and the feudal lords and clergy arose a middle class, the “bourgeoisie,” which, with all its faults and limitations, was destined to become the mainstay of the new society.

In political affairs the town group took a position beside lords

and clergy as a "third estate," whose ability to contribute to the expense of government was so considerable that it must be consulted when money was to be raised and spent. As old customs crumbled and new rules must be made to replace them the interests of producers and consumers must be regarded along with the class interests inherited from the old order of society.

SIZE OF MEDIEVAL TOWNS

Vitally important as were the towns in all respects they were yet but small affairs compared with the cities of the present day. The first exact census of an urban population in northern Europe was made in Nuremberg in 1449, and gave that town a total of slightly over 20,000; yet this was in the last century of the Middle Ages, and Nuremberg was one of the largest of German towns. Trustworthy estimates would allow, even in this late period, to such important towns as Frankfort on the Main and Basel less than 10,000, to Dresden and Leiden less than 5,000. The population of even the larger English towns would fall into the lower of these classes. Some "world-cities" there were already, with a population exceeding 100,000: Paris in the north of Europe and Venice and Constantinople in the south; London may have had over 50,000, in a class with several of the great Italian towns.

These figures, be it noted, refer to places of exceptional size in the closing centuries of the Middle Ages. Even then it is safer to think of the ordinary town as of the order of the minimum urban group, 2,500 as fixed in the census of the United States. Obviously, in their origin out of agricultural villages, they could have counted at the start but a few hundred people, and although some grew with amazing rapidity many remained mere dwarfs throughout the period.

PHYSICAL CHARACTERISTICS

Records and physical remnants have been better preserved in the larger towns; on them may be based a sketch of urban conditions. Protection was indispensable, and was provided at first by the simplest means, perhaps a ditch and stockade, to be replaced as the town grew in size and wealth by masonry cul-

minating in superb walls and towers, of which some examples have still been preserved for the admiration of tourists. Space was precious when it had to be so rigorously enclosed, and in many, probably in most large towns, the population was seriously congested. Streets were narrow and winding, as they had grown up without plan on old paths and byways. Houses were at first, of course, like those described in the preceding chapter, and in some cases remained of this character, so that a recent author describing English conditions in the fourteenth century could assert that they were little if any better than the huts now sheltering the Danube herdsmen. The flimsy nature of these early buildings can be gathered from a London regulation of about 1200 that every ward should have an iron hook with which a house could be pulled down when a fire in it menaced neighboring houses. Built of wood, thatched with straw, lacking even a chimney, the house of the early period was fuel for great conflagrations, which regularly swept the towns until, little by little, a more substantial style of building established itself.

SANITARY CONDITIONS

Even in these early houses the population was congested. In Cologne in the thirteenth century, the weavers lived in barracks or tenements, units of two or three rooms of which a dozen might be grouped under one thatched roof; a third of the dwellings in the town were of this description. As the population grew and the buildings were made more substantial, higher stories were added to them, and often these were built out over the street so that they badly obstructed light and air. Windows in London, about 1200, were bare openings, closed with a wooden shutter at night; after 1300 glass windows became common. Water was supplied from wells or springs within the town, inevitably contaminated since there was no system of sewage disposal. A London ordinance of 1189 demanded that the "necessary chamber" of a house should be separated from neighboring property by a space of about three feet, but even after 1500 and 1600 the town government in Paris found difficulty in enforcing the requirement that every house should have a privy. After 1700 the English government had to buy up an alehouse

adjoining St. James's palace, since the stench from a privy had several times forced their majesties to remove from their apartments.

Under these conditions the expectation of life was pitifully small. Deaths seem to have exceeded births, even in normal periods without a pestilence; families, even of the upper classes, died out after a few generations. The towns could not have maintained themselves without constant immigration from the countryside.

HANDICRAFTS

If the towns, judged by present conditions, seem small affairs, still more so seem representatives of the new occupation which they introduced on the scene, manufacture. Yet every stage must have its beginnings, and they must be small. Judged by the possibilities latent in industrial specialization, with the attendant changes not only in economic but also in social and political organization, no later step in progress seems comparable in importance.

Even so far back as the time of Charlemagne great lords had maintained industrial specialists on their manors, but these were in a sense artificial creations. On the ordinary manor of the early period there were no independent full-time industrial workers serving the needs of the people; even the miller served the lord's mill and gave it only part of his time. Apart from scattered exceptions the representatives of the new branch of activity rose with the towns, and developed with them.

The towns were the cradle of handicrafts serving the primary industrial needs of the people. Let the reader cast his eyes about him—in the room, in the dining room or kitchen, on his person, on the house—and he will see everywhere things essential to his comfort but which he has not made and could not make himself. It was the business of the town artisan to supply these needs. Here is a list of characteristic trades in which, for emphasis, the words are capitalized which became common English family names: Skinner, Tanner, Shoemaker, Weaver, Fuller, Dyer, Tailor; Smith, Mason, Carpenter, Wheelwright, saddler, harness maker; Potter, Cooper, coppersmith; Baker, Brewer, butcher. The usual town would comprise only a few of the trades above.

POSITION OF THE CRAFTSMAN

The town craftsman exercised in his own person all the functions which in the present elaborate organization have been taken over by specialists. He was capitalist in the sense that he owned all the stock and tools needed in his trade; he was foreman, overseeing the work of his few helpers; and he was laborer, working with them. He was his own purchasing agent and salesman.

A modern efficiency expert would say that a man could not be equally good in all these varied lines of activity, and indeed we shall see that the craftsman was later driven from the field by more competent specialists. In the early towns his place was secure. Power machinery was in its infancy; the most notable illustration of it, the fulling mill, compacting the fibers of woolen cloth, was exceptional. Hand tools and manual dexterity were the important factors in manufacture. Processes were fixed by tradition, passed on from one generation to another; and products likewise were of an unchanging standard, free from the whims of fashion. The market, both for the purchase of raw materials and for the sale of the finished product, was small and stable. What little competition was possible under these circumstances was discouraged by the guilds.

This early period of manufacture appears in many ways ideal, a golden age. The craftsman, embracing all parts of his work, was independent, a little king. His helpers were learning the trade under him, and looking forward to becoming master craftsmen themselves. Free from the pressure of competition and the perplexities of a speculative market the craftsman could devote himself to creative work. However simple the product it represented his personality; there could be a pride of calling even in making shoes or baking bread. Handicraft rose to the dignity of art. The products preserved in the museums of Europe are the admiration, almost the despair, of a later age. The Gothic cathedrals, designed and executed by craftsmen, are still unmatched in majesty and beauty.

GILDS; THE MERCHANT GILDS

The student must be careful to distinguish handicraft and gild. Handicraft was the form of industrial organization de-

scribed above, in which all the functions of making and marketing were combined in one person. The term is economic, denoting a system of producing wealth. The gild was a group of producers united by common interests, social and political as well as economic. The Anglo-Saxon word *gild* appears to have meant originally a payment, a contribution to a common fund. There are evidences of gilds existing before the Norman conquest; in that period they were associations for mutual protection, or clubs like later benefit and burial societies.

With the rise of the towns, about 1100, gilds spread over western Europe. Where the currents of trade met some interruption, on the seacoast and rivers where goods were transhipped and at the junction points of important routes on land, merchants would necessarily gather, and would naturally band together to protect themselves. This was an age of violence in which highway robbery was a dignified pursuit; merchants needed to travel armed, and often carried their goods in convoys or caravans. The groups, at first temporary, became permanent and settled in location; merchant gilds had established themselves. On the Continent these tended to represent the aristocracy of the trading class, corresponding to the wholesalers of later times, dealing in foreign wares and in important domestic staples such as cloth. They were exclusive and refused admission to the craftsmen "with dirty hands," "with blue nails," and the peddler "who hawked his wares in the streets."

In England the development was somewhat different. The charter which recognized the existence of a town commonly granted it a "gild merchant" to represent the mercantile interest and regulate trade in the town. Artisans were included as being traders if even on a small scale; of the nine members of the Shrewsbury merchant gild in its earliest period two were fishermen and one was a butcher, occupations of the others being unspecified. While on the Continent there were bitter struggles against the merchant gild by craft gilds seeking to assert the rights of industry, England was saved from such trouble; as different crafts established their own gilds the general merchant gild declined in importance, and faded away into the town government.

CRAFT GILDS

As the representatives of a trade, weaving or shoemaking or whatever it might be, increased in number in a town it was but natural that they should organize to defend and further their common interests. They wanted to manage their own affairs, free from interference and possible oppression. The feudal period in which they lived was used to the idea of parceling out power, particularly the right of jurisdiction, to different individuals or groups; what the members of a certain craft wanted and got was the power to make their own rules and apply them to members, for the good of the craft. They could do this effectively only as they could impose membership on all in the town who followed the trade; monopoly was a necessary and regular feature of their existence. As long as they managed their affairs with a recognition of the public interest they were allowed to go their own way, but they were always subject, at least in theory, to the control of the political authorities above them. A judgment on the economic policy which they followed can best be reserved to be considered a little later. They were a many-sided institution, important not only in the economic but also in the social and political life of their time, and, like other institutions, differing in their influence at different periods of their existence.

At their start they command entire respect and approval. They gave to the manual laborer a position of independence, stimulated his self-respect, and roused his ambition. These workers, of whom some had just emerged from manorial servitude, were rough and uncouth; they needed the social discipline and the moral repression which gild rules and gild spirit provided. Even the regulations imposing personal cleanliness and decent dress at meetings were necessary and effective. They helped to cherish the scanty fund of technical information, established standards of quality, and stimulated rather than repressed the energy of workers who previously had had little incentive to exert themselves. The administration of their affairs, with regular meetings, both business and social, was valuable as an experience in government. They were democratic, in the sense that all masters were equal and all helpers could hope to become mas-

ters; they were republican, in that they annually elected their officials. They were schools for the practice of politics on a larger scale.

MODERN INSTITUTIONS RESEMBLING THE GILDS

It may be profitable to raise here the question of what we have at the present day resembling the guilds.

The institution of the present most like a merchant gild is a municipal chamber of commerce. Like the medieval counterpart it combines representatives both of trade and manufacture, and is designed to further their interests in the group. While in the United States it is a private organization, in some countries it is established by law, and is a recognized part of the machinery of government. Nowhere has it the importance of the merchant gild of the Middle Ages. Both trade and manufacture have become too firmly established and too generally accepted to require the anxious defense against enemies which they needed in the feudal period; the field of both is too broad to make local regulations of great importance.

So with the craft gild we need to go outside the narrow boundaries of the town to find analogous institutions, representing the interests of specific industries. We find them in the national associations of the manufacturers of different wares—steel, silk, beer, and so on. Lacking any public power, such as they exercised for a brief period under the NRA in the United States, they endeavor to establish by agreement certain trade practices in the industry, and work to obtain favorable legislation, particularly protection by tariff, from the national government.

Trade unions are *not* properly comparable to the guilds. The guilds represented all grades of producers. The merchant gild represented trade and manufacture in a combined whole. The craft guilds split manufacture by what may be called a vertical cleavage into separate trades, and represented those engaged in making and marketing a particular commodity. Both guilds included all those active in production, and both guilds exercised their powers with an obligation, expressed or implied, to recognize the interests of consumers and community. The trade union, on the other hand, has developed as a result of what may

be called a horizontal sectioning of industry, into an upper class of employers and a dependent class of wage earners, and represents the interests of a dependent class inside an industry. The development of the sense of social responsibility has hitherto been retarded by the struggle for independence.

TOWN POLICY; REGULATION OF TRADE

As said above, the towns were a new and strange phenomenon in the world of their time, the world of manors peopled largely by unfree dependents and subject to feudal lords who assumed most of the power of government. The town group felt keenly the novelty and difficulty of its position. To maintain and further the common interest it exercised a strict control over its members, and regulated their activities in minute detail. As a modern writer has said, the medieval town "created the most consistent, vigorous and long-lived system of economic policy that has ever existed."

So far as regarded the outside world the policy aimed to obtain the greatest abundance of food and raw materials at the lowest possible price. People bringing in goods for sale must offer them in a definite place, the market, at certain hours, so that the townspeople might compare, select and bargain to the greatest advantage. "Foreigners," people not belonging to the town group, might not compete with the town retailers by peddling their wares or by setting up shop. Even the town retailers must recognize that the interests of consumers came first, and must give ordinary citizens the chance to buy before they laid in their own stock of goods for resale. Members of the group must not intervene to disturb a bargain while the chaffering was in process, but might demand a share in it when it had been completed. Competition was good as applied to the foreigner; it was bad inside the group. The regulation of trade ran into great detail, but this sketch of its general character must suffice here.

REGULATION OF INDUSTRY

A student conversant with the history of American experience in the government regulation of public utilities will recall the case of *Munn vs. Illinois* as of outstanding importance. The Supreme Court decided that a grain elevator, a purely private

undertaking, might not charge what rates the owner chose, that, in view of the importance of its service to the local community and the lack of effective competition, this private undertaking was "affected with a public interest," and was subject to public control.

In the medieval town this view of industry as a public function was held as a matter of course, and applied to all trades. The butcher, the baker, the candlestick maker had the "office" of supplying the townspeople with his wares. He was granted a part of the field of industry on condition that he assumed responsibility for the proper conduct of his trade and administered it in the general interest.

The industrial policy of the town endeavored, further, to balance this regard for the consumer with another element, more characteristically medieval, a serious regard for the person of the producer. It got its vigor mainly from its artisans. It was interested not merely in their products, as means to supply the demands of the home market and to purchase needed goods from outside; it relied on them to pay taxes, to furnish military and police protection, to supply the personnel for the administration of its government. In a sense it was they. So it was willing to subordinate other interests to the maintenance in its artisans of public spirit and effective cooperation. It sought this end by attending even more to the distribution of wealth than to its production. The town was the cradle of the middle class and aimed to preserve its middle class by protecting it from extremes of wealth and from the economic subordination of one citizen to another. The town wanted not a small number of great undertakings but a great number of small undertakings, each one big enough to absorb a craftsman's full capacity, but not too big for one craftsman, with a few helpers, to embrace.

DIVISION OF THE FIELD OF INDUSTRY

In accordance with this regard for the person of the producer the field of industry was divided into parts, each to be administered by a separate guild of craftsmen. The division might be according to the material (coppersmith, goldsmith), according to the process (tanner, weaver, dyer), or according to the finished product (shoemaker, tailor). This separation of trades not only

offered each handicraft a fair field for activity, but also made it possible to hold each gild responsible for the quality of wares furnished. At Coventry, in 1435, complaint was made that the iron workers had too many branches of the trade in their hands; that if the smith injured the metal "by unkind heat" in working up the bar he would tell the brakeman, reducing it to rod, that it must be "tenderly cherished," but that later, made into hooks it would fail the fisherman, or made into wire it would fail the card maker; if all were separate crafts each would test the quality, and would not pass bad wares further in the process. A London regulation required "hostelers" to buy their bread of the bakers, and in the early inns the traveler had to send out for meat and wine, since licensed victualer and innkeeper belonged to separate gilds.

REGULATIONS AIMING TO PRESERVE EQUALITY

Within the gild all sorts of regulations were adopted to maintain the equality of individual masters. A normal working day was fixed, marked in some towns by the ringing of a bell at opening and closing. Night work was forbidden, both to prevent "chiseling" and to protect quality. The number of helpers whom a master might employ, and the number of jobs which he might undertake, were regulated that he might not overreach his fellows. The "right to work" belonged to the gild, not to the individual; in Lubeck a man who wanted a ship built or repaired applied to the gild for a master workman. Members of the gild were bound to assist each other in completing work which had been undertaken; sometimes they were forbidden to work for a customer who was in debt to a fellow master. They could share in bargains made in the purchase of raw material, and were forbidden active competition in the sale of the finished goods. At first all wares must be sold in the market, and peddling was forbidden. Later, when sale in the shop was allowed, and still later when shop windows became common, there were restrictions on the window display permitted. Prices, set by the gild subject to municipal regulation, were the same for all, and all were subject to meticulous regulations designed to maintain a standard of quality. In most trades tools were simple and raw material inexpensive, so capital in those forms offered no basis of inequality.

Such machinery as the fulling mill was provided either by the town itself or by cooperation of the gild.

CRITICISM OF GILD POLICY FROM THE ECONOMIC VIEWPOINT

As will appear in the next chapter the gilds outlived their usefulness; most of them became a hindrance rather than a help to society, some became instruments of oppression. Even in the period of their bloom their policy, framed to realize social and political ideals, was obviously bad when measured by the economic standard, the production of wealth. In applying the principle of equality they did, it must be conceded, do something to raise the standard of weaker members, but they leveled down as well as up. Men of energy and ambition, natural leaders in progress, were repressed, and were refused a field in which they might make their capacity for leadership effective. They must keep step with the slow-moving; each might have only his own small share of the "lump of labor," each must labor in the same way as did the others. Technical processes were ruled by tradition; the old way of doing things was right, any innovation was wrong. Some of the London capmakers, in 1376, devised a water mill for the fulling of caps which enabled them to dispense with some of the labor of helpers. The town forbade the use of mills, and Parliament itself decreed that caps should never again be fulled in mills invented "by subtle imagination to the destruction of the labours and sustenance of many men." Quarrels between gilds over division of the field of industry go back almost to their origin. They were sometimes between gilds laying claim to the same part of the field (old-clothesmen and tailors, lorimers and harness makers); sometimes between gilds following each other in the processes of production (weavers and fullers, curriers and tanners) complaining of the quantity or quality of the goods furnished them to work on.

Monopoly implied regulation both of price and of quality, and set problems that were never satisfactorily solved. If the museum specimens of the work of this period rouse our admiration we must remember that they represent only the best, picked from countless others which have perished. Complaints of scamped work, of fraud and adulteration, were never-ending,

and leave us with the impression that in general the standard of quality did not attain even to mediocrity. Regulations in form designed to preserve fraternal equality could be and undoubtedly were used to exploit a monopoly. Rules against overbidding in the purchase of raw materials kept prices low to the producer; rules against competition in sales kept prices high to the consumer; rules against enticing workers from another master kept wages low to the helper.

QUESTIONS

Summarize general features of the manorial period: economic, social, political.

What changes were wrought by the rise of towns in each respect?

How large were the medieval towns?

What were their physical characteristics; their sanitary conditions?

Explain the importance of the rise of handicraft. What were characteristic crafts?

Why is the period of the handicrafts pictured as a golden age?

Distinguish craft and gild. Explain the rise of merchant guilds.

Explain the rise of craft guilds, and describe services that they rendered.

Compare and contrast modern institutions.

Describe and justify the town regulation of trade.

Describe and justify the town regulation of industry.

How did this lead to a division of the field of manufacture?

Illustrate regulations designed to reserve equality.

What may be said in criticism of gild policy?

Can you draw any parallels in the policy of modern trade unions?

READING

Two small books by Henri Pirenne, *Medieval Cities* (Princeton, 1925), and *Economic and Social History of Medieval Europe* (N. Y., 1937), contain good reading on the towns, on trade and other subjects. On the guilds, G. Renard, *Guilds in the Middle Ages* (London, 1919), is an excellent brief survey; for more extended treatment the student should consult the books of George Unwin.

The medieval town. (Clough and Cole, chap. 2, pp. 23-40; Heaton, chap. 8, pp. 132-147, bibliography 198-9).

Growth of the towns. (Lipson, 1: chap. 5, pp. 185-220.)

Regulation of industry and trade. (Clough and Cole, chap. 11, pp. 201-222.)

The gild merchant. (Lipson, 1: chap. 7, pp. 264-307.)

Craft guilds. (Lipson, 1: chap. 8, pp. 308-439.)

Organization and administration of guilds. (Renard, chaps. 2, 3, pp. 6-31.)

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Aims and methods of guilds, merits and defects. (Renard, chaps. 4, 5, pp. 32-72.)

The problem of control in medieval industry. (Evans in *Political Science Quarterly*, 1921, 36:603-616.)

The businessman and economic systems. (Gras in *Journal of Economic and Business History*, Feb., 1931, 3:165-184)

CHAPTER III

Development of Manor and of Town

REACTION OF THE TOWN ON THE MANOR

A sharp division of historical development into periods may be misleading, and always requires correction. Yet a student entering a new field asks to have the facts simplified, and for his sake it may be said that the two preceding chapters cover roughly the period 1100–1300, and that the present chapter describes the development of manor and town in the period 1300–1500.

The manor, as it existed all over western Europe, had not been established by conscious legislation. It was a natural growth, suited to the conditions of its time; people accepted it with as little question as they did the pressure of the atmosphere. As conditions changed the manor changed with them, and dissolved into new forms. Again, there was no great emancipation proclamation; laws reflected the changes, rather than caused them.

The single influence of greatest importance in the development of the manor was the rise of the town. The town lived by the exchange of its industrial products for the food and raw materials of the countryside; it represented a demand for the products of rural labor. The town grew by attracting to its new industries the laborers of the country districts. These are, in brief, the two ways, economic and social, in which towns changed conditions and transformed the manor.

INFLUENCES IMPROVING THE STATUS OF RURAL LABOR

The economic demand of the town market gave to agricultural products something which they had lacked in the period of self-sufficiency—a value in exchange. Studies of English conditions in the thirteenth century show an increase in the percentage of wheat sold, of the total produced, of 44%, a rise in money price

of over 50%. The town industries sought raw materials as well as food, and offered money for the products of trade plants and animal husbandry. The rise in value of rural products enhanced the importance of the laborer who produced them.

Lords of manors, therefore, found a new incentive to keep intact the group of dependent laborers, and to stimulate their efficiency in production, while at the same time the lords must bid against the attractions of the town if they would keep the laborers from deserting them. *Stadtluft macht frei*, "town air emancipates," was not so sweeping a rule in England as on the Continent. In England a villein who would throw off the claims of his lord must not merely live in a town for a year and a day, but must become a landholder or a gildsman and become a taxpayer to assure his position. The towns, ready enough at first to receive new members, became more exclusive and tolerated fugitives only as casual laborers to do the dirty work for the group. Even so the towns still kept their power of attraction. A study of the names on the rolls in Norwich, about 1300, shows that this town had gathered its citizens from more than 450 localities in the counties of Norfolk and Suffolk, and there were many in the town too obscure to have their origin noted. All over western Europe lords of manors had to abate demands on their villeins, to keep them at work at home.

On the Continent another factor operated to improve the condition of the dependent class. The migration of peoples, at the fall of the Roman Empire, had gone so far that Slavs, following after Germans, had moved westward to the river Elbe, halfway across modern Germany. A reverse movement set in about the year 1000. Germans sought to reconquer the territory which they had lost, and fought their way eastward, even into modern Russia. To colonize the land they had won they offered favorable terms to settlers, and added their demand for labor to the demand of the towns.

THE BLACK DEATH

In the medieval world custom had a tenacity of resistance that made change slow and difficult. A sudden shock, however, could do much to jar people from their set habits, and such a shock was given by the Black Death, a bubonic plague which ravaged

Europe in 1348-49. This was by no means the first or the last of the pestilences invited by the low standard of living, but was far and away the worst. In different parts of Europe the mortality varied, but it is sober fact that in many regions one-third, one-half or even a larger fraction of the population died in the space of a few months. Perhaps the most vivid realization of conditions is afforded by the experience of an individual English village. The plague had entered England in December, 1348. In Hunstanton, March, 1349, the court rolls record the death of one woman during the past month. Five disputes were set down for hearing in the April court, with sixteen persons engaged in them as principals or witnesses. When the day arrived eleven of the sixteen were dead. In the May court three suits for debt were entered; the plaintiff in one case, the defendant in the second, both plaintiff and defendant in the third, died before court day. In June the court was not held at all.

STATUTES OF LABORERS; AGRARIAN REVOLTS

At a time when the demand for labor was increasing, its supply was sharply diminished. Even medieval custom could not resist this shock. An English ordinance of June, 1349, required all adults, both bond and free, not having means or land of their own, to serve an employer, preference given the former lord, for the wages which they had received in 1347, because, as the preamble read, "a great part of the people, and especially of workmen and servants, late died of the pestilence, many, seeing the necessity of masters and great scarcity of servants, will not serve unless they may receive excessive wages, and some are rather willing to beg in idleness than by labour to get their living." Langland, the English author writing shortly after the Black Death, said: "Labourers who have no land to live on but their hands disdained to live on penny ale or bacon, but demanded fresh flesh or fish, fried or baked, and that hot and hotter, for chilling of their maw; and but if they be highly hired else will they chide and wail the time that they were made workmen."

The ordinance of 1349 was the first of a series of so-called "Statutes of Laborers" by which Parliament endeavored to resist the influences which were improving the condition of rural laborers at the expense of their lords. Fugitive slave laws branded

runaway villeins with an F for their falsity; fined towns which gave them refuge; introduced a passport system to make evasion more difficult. Similar measures were taken in France. In neither country were the laws effective; they were minor obstacles to a resistless current which was setting the other way.

The period was marked by armed uprisings of the country people against their lords, notably the Jacquerie in France during the Hundred Years War, and the Peasants Revolt in England in 1381, associated with the name of Wat Tyler. The reader will find in Froissart's *Chronicles* a dreadful story of the rising of the French country people, their excesses, and the merciless retaliation of their feudal lords. In England the rising was less marked by brutality, and was significant in that it appealed to principle; the teachings of Wyclif and others had spread through the country the conviction that the existing organization of society was unjust and improper.

As laws had done little to stay the movement toward enfranchisement these risings did little to further it; they were only surface manifestations of the great tide flowing underneath.

CHANGE FROM CUSTOM TO CONTRACT; COMMUTATION OF LABOR SERVICES

After this survey of the conditions leading to the dissolution of the manor it is necessary to attend to the forms which the development took. So varied was the process, in different places and at different times, that a bare sketch must suffice.

In general, it may be said that the important element of change was the substitution of contracts expressed in money for customary dues payable in labor or in kind. The circulation of money spread with the growth of the towns, and encouraged a valuation in terms of money even when no cash changed hands. It was convenient to have a money price set on a day's work, if for no other reason to have a basis for assessing penalties when the work was not done. From that to the payment of money instead of rendering labor seems a short step, but this commutation of labor service into cash actually came much later, and when it did come was of decisive significance.

Let us assume that a man working for himself, keeping the whole proceeds of his labor, would produce a value of 2*d.*, that if

he worked under duress for another he would produce a value of 1*d.* Then, if by agreement with his lord he commuted the day's work for 1½*d.*, each party to the bargain would be better off by a halfpenny, and society would be a gainer too by the increased production. The assumption of a doubled output may seem an exaggeration, though the European peasant with "the magic of property" to stimulate him might well attain it. In a later period of manorial services in Germany one economist estimated four days of forced work to equal three days of a wage laborer, another economist put the equation at three to two; and the laborer, of course, lacked the incentive of the proprietor.

The change resulting from commutation not only increased production; it reduced friction in the society and did away with much waste of time and energy. "The landlord gained by the change, because he received an economic instrument of greater efficiency; the peasant gained because he got rid of personal subjection to control; both gained; for a whole system of administration, a whole class of administrators, stewards, bailiffs, reeves, a whole mass of cumbrous accounts and archaic procedure became unnecessary."

VARIETY OF DEVELOPMENT

The progress of commutation was slow and irregular. There were periods in which the lords, still with dominant power in the country districts, found it to their interest to return to the system of forced labor, sometimes increasing the services imposed upon their villeins. Obviously the commutation of labor services for money left the lord's demesne land on his hands, either to be cultivated by wage laborers or to be let out to others for cultivation. Both methods were employed, but the latter was the more usual, and spread rapidly after the Black Death. There was great variety in the new forms of contract which replaced the old manorial customs. In England, for a time, stock was let with the land; this stock and land lease relieved the cultivator from supplying the most important part of the necessary capital until he or his successors had saved enough to transform the arrangement into an ordinary lease. Land was sometimes let for a share in the crop. This arrangement, never important in England, was common in some parts of the Continent, and formed the basis for systems

of metayage, share-cropping, which have lasted almost to the present. In England, and in the more advanced parts of the Continent, leases were made for money rentals, for terms of years or for life.

END OF VILLEINAGE IN ENGLAND

The student will remember the distinction between tenure and status on a medieval manor—the terms on which land was held, and the personal position of an individual. Commutation affected only tenure, but in so doing dissolved the economic structure of the manor, for all the important agricultural services were based on the holding of land. The same influences, moreover, which transformed tenures were working to the advantage of the personal status of the villeins. A man was bond only by blood, only if his ancestors before him could be proved unfree; any break in the chain of descent emancipated him. With the increased freedom of movement following the rise of the towns it became more and more difficult to prove bondage. A man might flee his manor not only to a town, but to another manor, and even to another manor of his own lord, and be accepted there as a freeman, with the rights to move about as he pleased, to give his daughter in marriage where he would, to put his son in the church, and to refuse longer to pay tallage. The lord's right of pursuit became an empty form, and the number of bondmen constantly decreased by desertion. The status of the unfree was by silent consent assimilated to that of the fully free. In England, by 1500, personal freedom was practically universal. As late as 1561 Norwich surrendered an apprentice as a runaway villein, and even later Elizabeth emancipated some serfs on royal manors, but these incidents are interesting only as anachronisms.

RURAL DEVELOPMENT IN FRANCE AND GERMANY

On the Continent the direction of development was the same as that in England, toward the decline of lordship and the rise of dependent classes to freedom, but the forms of development varied greatly according to conditions. In France the manor broke up as an economic unit earlier and more completely than

in England. In many districts villeinage in the sense of a class personally unfree subject to heavy labor services had disappeared before 1300; the mass of the cultivators were in process of establishing themselves as peasant proprietors. The variety of development is illustrated by the class of *mainmortables* (*mainmorte*, dead hand: the significance of the term is obscure) important in number in some periods and some regions. It was said of them that they lived like freemen, and died like slaves. They could leave their lord, and were subject only to strictly limited dues, but could not dispose of the land which they cultivated, which must pass in succession to members of the family or else revert to the lord.

In Germany, where the full effect was felt of the colonial movement eastward, progress was more rapid than in either France or England. Manors dissolved, members of the working class freed themselves from personal dependence, and got permanent rights to the land which they cultivated in return for fixed and moderate dues. From 1200 until nearly 1500 the German country people lived in a golden age. This is the more noteworthy because, as will appear later, they were destined to lose their liberties, and to sink back into dependence worse than the medieval.

STRAINS IN THE GROWING TOWN

The sketch of life in the towns in the preceding chapter referred to their early history, roughly the period from 1100 to 1300. We have now to attend to their later development.

The early town had the vigor of youth. Handicraft, the mainstay of its existence, occupied the bulk of the population, and assured all members a decent living. While the gild regulated strictly the activities of the members it gave the craft as a whole a position of dignified independence. Gilds gave expression to the feeling of fraternity, and sought to maintain equality. Property and income were so distributed as to maintain a great middle class; learners in a trade were masters in the making, with fair expectation of promotion to the highest rank. The government of the early town was democratic, with supreme power vested in the common council, a general assembly of all the citizens; and the municipal policy was liberal in its relations with the

country outside, both in its reception of new members and in regard to trade. All of these conditions changed as the towns grew in wealth and population.

If the term of an apprentice, in which he is supposed to learn the trade and prepare himself to exercise it independently, is fixed, say at seven years, leaving a span of life several times that length ahead of him, obviously all the apprentices could become masters only when conditions permitted a rapid growth in the number in the trade. Obviously pressure was intensified when a master kept several apprentices. The pressure could be, and was, relieved by lengthening the probationary period, requiring a term of service after apprenticeship before promotion to the mastership. Qualified workers, serving as helpers after they had learned the trade, were called journeymen, day workers (from the French *journée*, not, as might be supposed, because they traveled about in quest of work, as they actually did on the Continent).

So rapid was the growth of towns that it might be long before they reached the critical point at which there was no longer room for all at the top and a class of day laborers, living and dying in a dependent position, came into existence. Even in Paris, about 1300, the 5,000 masters in the guilds are said to have employed only 6,000 or 7,000 journeymen. Sooner or later, however, at different times in different trades, the theory expressed in the military phrase that every private in the army has a marshal's baton in his knapsack, had to be abandoned.

APPRENTICESHIP

For the purpose of illustration, the text above departs somewhat from the actual course of historical development; in England the requirement of a definite term of apprenticeship came somewhat late in guild history, the fixing of the term at a definite number of years came still later. From the start the guilds realized the need of maintaining the standard of craftsmanship by teaching beginners the elements of a trade, but they made the course of instruction and of promotion informal.

A master took children (in some towns they might not be *under* seven years of age) into his family as apprentices, and so could give them needed instruction not only in technical matters but in

morals and social deportment as well. This education was needed and was often wholesome, but it opened the door to abuses. To illustrate from the records of Paris courts about 1400: the court dissolved an apprenticeship because the master goldsmith had given the boy bad wounds in the head by beating him with a bunch of keys; it warned another master that he must treat his apprentice like the son of a citizen, beat him if necessary, but not have his wife do it; it bound over for trial the master of Isabel B. who said during her last illness that she was dying from blows and kicks given by him; it found another case in which a working girl had been prostituted by her mistress. Less sensational but an even worse abuse from the economic viewpoint was the practice of using the apprentices as domestic servants, or as mere drudges in the trade, instead of teaching them the technique of the trade in its entirety.

THE JOURNEYMAN CLASS

As in time it became more difficult to find a place as independent master in a trade the class of journeymen grew in number. The journeyman was a graduate apprentice, and was at first treated much as the apprentice had been, with regulations designed to continue his education and further his progress in the trade. He lived in the family of the master, who was still his moral tutor. German regulations forbade the journeyman to stay out late at night, to gamble, to go more than once a week to the drinking place, to drink too much at any time. On the Continent he was sometimes required to move about that he might better learn the trade as practiced in different places, taking engagements of six months or so with different masters.

The journeyman was better able than the apprentice to protect himself from personal abuse, and did so, as the court records show, with fists and more deadly weapons; a cloth shearer at Paris, 1350, was charged with burying his sword in his master because, as he said, "false ipsum a suo servicio in tempore mortuo sui operis ejecerat"—the master had improperly discharged him when trade was slack. Far more serious than any personal abuses was the growing difficulty of gaining admission to the rank of the masters, who had the government of the gild entirely in their hands, had a superior economic position and enjoyed most of the social

prestige of membership. As regulations of the early period, restricting the number of helpers whom a master might employ, were relaxed or evaded, masters faced the danger of overcrowding, and made admission to their number more difficult. They raised entrance fees and looked closely to the birth and social standing of the aspirant. The masterpiece (French *chef d'œuvre*, German *Meisterstück*), at first a perfectly proper test of a workman's competence, not unknown in England but more common on the Continent, was used not as a test but as a bar; the gild required something so elaborate or so expensive that the ordinary workman could not meet the conditions.

RISE OF A LABOR CLASS AND LABOR ORGANIZATIONS

With limitation of the number of masters and increase in the number of helpers, there came gradually into existence, even in the Middle Ages, a labor class—a group dependent on wages for their living, throughout their lives. Becoming conscious of class interests, members of this group formed associations, at first of the nature of friendly societies, fraternities encouraged by the church, but soon representing the economic interests of their class. These associations were real forerunners of the trade unions of later times. They made collective bargains, fixing wages and hours of work, and organized strikes when their demands were not met.

In England these associations were less numerous and less durable than on the Continent. Nowhere did they achieve the permanence and power of the later trade union. They grew up in a period in which the democracy of the early town government had given place to an oligarchy representing class interests to the disadvantage of the working man. The Provost of Orleans, 1406, ordained that every workman of the fullers might contract to work for such sum as he could get, and the other helpers of the master might not fine a workman who agreed to work for less than they received. The gild, the town government and the national government all opposed these coalitions of labor. In England employers provided for their journeymen a subordinate organization, like the company union of a later time, in which the workers could be overseen and controlled.

DEVELOPMENT OF CAPITALIST ELEMENTS

The rise of a labor class ran parallel to a development among the class of employers, away from the ideals of the early gild organization in the direction of capitalism and "big business." Industry, which had at first been sectioned into small trades to afford a decent living to many masters, tended toward consolidation of kindred trades working on leather, metals, cloth, or engaged in building or victualing. In the leather trades gilds combined tanners and shoemakers, curriers and cordwainers,* skimmers and glovers, saddlers and others, and so on. The departure from the simple conditions of an early period can be noted as early as 1271 in regulations of the London cordwainers, which forbade masters to keep more than eight helpers or to give out work to helpers in their homes, and which already set high premiums to bar the promotion of laborers. Purchases of Spanish leather by the masters amounted in modern currency, to some £300 or £400 apiece (say \$1,500 or \$2,000) in a year. Crafts which purchased the raw material or marketed the finished goods forced into a dependent position the crafts engaged in the intermediate processes. A saddle was the product of workers in four crafts, joiners, painters, lorimers (providing the metal work), and saddlers. The craftsmen had been organized in four separate gilds of equal standing, but now the saddlers combined the groups, with themselves in a superior position, employing the others to work for them. The cutlery crafts came to be controlled in London by the handle makers, in Paris by the blade-smiths. In every group of trades that part of the group which had superior capacity in driving bargains and making contracts, whether its superiority was derived from a disposable fund of capital or from better information and judgment, dominated the others. The textile trades passed almost directly from the stage of household manufacture, as seen in the manor, to a more advanced stage in which the manufacture and marketing were controlled by a small proportion of those engaged in the industry. In the silk trade those who provided the costly raw material

* A cordwainer, in the strict sense, worked on a superior grade of leather, of the kind obtained from Cordova, Spain; the term came to be applied to shoemakers as a class.

had the industry in their hands. The woollen trades, in different places and different times, had a varied history, but nowhere showed for long the characteristic organization of craft and gild.

DECLINE OF TOWNS AS A RESULT OF NARROW POLICY

In closing this chapter on the development of the towns we must note an unexpected and significant feature of the history of some of them in the closing centuries of the Middle Ages—not merely a stoppage of growth but an actual decline of population. We can understand this in the case of places once flourishing seaports but deprived of trade by the silting of their harbors and now “shrunk within their walls like shrivelled nuts in their shells.” Some other explanation must be found for many other cases in which the records show abandoned houses and stagnation or decline of population. The phenomenon appears to be connected with a change in municipal policy.

In the first stage of town life, when merchant guilds were dominant, the towns encouraged trade and traders, and welcomed immigration. As the craft guilds grew in power and took control they inclined to a policy of protection, imposing heavier dues and stricter regulation on trade with the outside world and on the merchants who conducted it. The policy tended to repress distant trade of all sorts, to make the town market a “staple,” that is, a compulsory trading place for the territory immediately surrounding, and to rest satisfied if the country people must make their industrial purchases and sell their food and raw materials in direct trade with the town craftsmen. The towns claimed a monopoly of the right to manufacture; industry in the country districts was illegal, subject to search and seizure. A liberal policy in the reception of immigrants gave place to one of restriction, as the town group, which had consciously limited its market, sought now to protect its “lump of labor” against division into many pieces.

This policy, called “closed town economy,” was not universal, but represented a tendency which was certain if not checked to lead to stagnation or decline. A characteristic feature of the later period was the rise of manufacture in the country districts, sometimes against the armed opposition of the towns, which sent

out raiding parties to destroy the tools and products of the "botchers," as village artisans were called. The towns with a restrictive policy could not meet the competition of rural industry, free from restrictions, and deflected the growing population to areas independent of the rule of the guilds. English towns such as Birmingham, Manchester and Leeds, where trade was free because they were merely overgrown manors without municipal charters, developed their industries and grew, at the expense of older towns with guild rule, such as Norwich and Exeter, York and Winchester.

QUESTIONS

What were, roughly, the periods of the manor and the town?

How did towns transform the rural organization?

Explain influences tending to improve the condition of the part-free.

What were the Black Death, its date, its effects?

What were Statutes of Laborers, Jacqueries, and their effects?

Explain the passage from custom to contract, and the advantages of commutation.

Explain the dissolution of manorial tenure, of manorial status.

How and why did the towns change in social and political organization?

Conditions of apprenticeship, and dangers involved.

Conditions of journeymen, and dangers involved.

What constitutes a "labor class"? When did it develop and organize?

Illustrate the development of capitalistic elements in industry.

Explain the decline of some towns at the close of the period.

READING

Rural change and expansion. (Heaton, chap. 7, pp. 112-130, bibliography 130-131.)

Breakup of the manor. (Lipson, chap. 3, pp. 88-132.)

Rise of new agrarian conditions. (Lipson, chap. 4, pp. 133-184.)

Decay of the guilds, external causes. (Renard, chap. 6, pp. 73-106.)

Decay of the guilds, internal causes. (Renard, chap. 7, pp. 107-115.)

Death of the guilds. (Renard, chap. 8, pp. 116-135.)

Reaction of town policy on growth. (Pirenne in *American Historical Review*, 1914, 19:494-515.)

CHAPTER IV

Medieval Politics, Money, Credit, Capitalism

POLITICAL CONDITIONS IN THE EARLY MIDDLE AGES

The principle insistently presented in this book is the need, if a society is to prosper, of a symmetrical development of its institutions. Economics and politics, in particular, can progress only as they keep step. In describing the backward economic organization of the Middle Ages reference has already been made to the political conditions, and at this point it seems profitable to discuss these in somewhat greater detail, and to sketch the improvement of government which made possible a corresponding advance in economic life.

We may start the survey in the period when the manor was in process of formation, using for material French documents of the ninth century. The successor of Charlemagne, endeavoring to maintain order, found the task apparently hopeless. Men were attacking houses, burning them and slaughtering the inmates. They were abducting women, were beating priests and chasing them from their churches. Robbery prevailed everywhere. A man seeking concealment could be assumed to be a robber, and might be killed on sight. The king confessed his impotence by ordering his officials to collect the people in assemblies, and read to them precepts from the Bible against brigandage, threatening robbers with excommunication from Holy Church on earth, and exclusion from heaven.

Under these conditions the manor developed. It was of necessity a little group nearly self-sufficient; the disorder of the time forbade any extended trade or specialized industry. To win some protection the common people had to submit person and property to an overlord.

THE FEUDAL SYSTEM

In the period following Domesday Book conditions were changing for the better. The functions of government without which a society cannot persist were now being exercised under the feudal system. Since money was lacking to pay the salaries of officials they were given land, and owed service, military and other, in proportion to the land which they held. The king, himself a great landlord, headed a ruling class which was maintained by the surplus products of the manorial workers.

One fault of the system was the local partition of authority. The king, nominally head, might in fact be "primus inter pares," first among equals, or actually less powerful than some of the lords supposed to be subject to him. In the century following after Domesday Book there were still in France some 40 little states, practically independent. In the next century some 24 lords were still exercising the sovereign right to coin money. As a result of the Norman conquest England enjoyed substantial political unity much earlier than other countries, but even there, about 1300, in one county (Berkshire) there were still over 30 private gallows maintained by lords who claimed the right of high jurisdiction over life and death.

Another fault in the system was the character of the rulers. In an age of violence a man won position by brawn rather than by brain. The ideal knight was a tremendous fellow who could split a warrior in two with one blow of his sword, who could straighten four horseshoes at a time, who would eat a quarter of a sheep at a meal. His descendants, inheriting his land and political position, were likely to inherit his mental deficiencies along with his physical qualities.

THE SOCIAL ORDER

A French bishop, about the year 1000, divided society into three classes: the lords who fought, the clergy who prayed, the common people who worked to support the others. Thomas Aquinas and other thinkers of the time accepted and approved this organization, regarding it as not only proper but permanent. They allowed a change of status only in the case of a man entering the ranks of the clergy; even in this case, the reader may re-

member, a man of servile birth needed the permission of his lord.

The danger of a caste system, as it exists in India, was never imminent. The warrior class needed the assistance of people of some education to help in administering their affairs, and drew largely on the clergy for the purpose. Many high offices of state were held by clerics. Further, rulers who employed people even in menial positions about their persons gave to them opportunities of influence which raised many to high rank. Some of the highest titles of recent times go back to a menial or even servile origin. Marshal, highest rank in some European armies, goes back to *mariscalcus*, horse servant. Likewise constable, similar rank in France before the Revolution, was originally *comes-stabuli*, head hostler. The steward, head of the kitchen department, also termed seneschal (old servant), often started a line which led to wealth and rank. The royal Stuarts of Scotland and England were descended from Alan the steward of Dol in Brittany. Many *servientes*, servants, of the Middle Ages gave rise to noble families of the later period.

PRIMITIVE LAWS

The laws governing this society were inherited from a primitive tribal period. In criminal cases the guilt or innocence of the accused was determined not by a sifting of facts but by character witnesses (compurgation) and by the application of an ordeal. The accused might be scared with a hot iron or made to thrust his arm into boiling water; the appearance of the wound, after a wait of three days, would show to the priest who examined it whether he was guilty. Or, if he was unfree, he might be bound and thrown into cold water, the extent of immersion deciding the case. The Normans introduced into England the trial by battle, a deadly affair in criminal cases, but which might in civil cases be carried on by hired champions. The practice gave rise to a class of professional champions; a monastery, subject to much litigation, might employ one in full-time service.

Conditions may be illustrated by the story of Ailward, about a century after Domesday Book. A's neighbor, B, refused to pay him a debt, so A broke into B's house and took some tools as security. B caught him, knocked him down, stabbed him and bound him as an "open thief." A bystander, C, suggested that he

could not legally be mutilated as a thief unless he had taken goods to the value of a shilling, so goods to that amount were bundled together and hung around his neck and he was taken to the shire court. Judgment was delayed and he had to wait a month in jail until the next session. He demanded single combat with C, or the ordeal by fire, but C, who had been bribed with an ox, demanded the ordeal of water, from which a man was less likely to escape. It is not known whether he underwent the ordeal or pleaded guilty, but in any event, after another month in jail his eyes were put out and he was mutilated.

IMPROVEMENT OF THE LAW

At the same time the case of Richard of Anesty, a claimant to some land, illustrates the delay and difficulty of a civil suit. He had time and again to go or send to France, where the king was fighting, and then to Rome, as the case was transferred to the ecclesiastical courts. He won the suit, but spent five years in pressing it, borrowing money meanwhile at usurious rates to meet his expenses and finally having to raise a sum large enough to fee his attorneys, the bishop's staff, the king and queen, their officers and physicians.

The king in whose reign these cases occurred, Henry II (1154-1189), was himself a brilliant reformer in legal procedure. He surrounded himself with a group of trained lawyers, professional judges, and established itinerant justices who toured the country; trial by jury supplanted the ordeal; Magna Charta fixed the royal court of justice permanently at Westminster. Students of constitutional history are familiar with these reforms. They are recalled here, for the benefit of the student of economic history, that he may realize how much needed they were if the rule of magic and of open bribery in disputed cases was to be transformed into the administration of justice as now understood.

Two points further need to be emphasized. First, even in England the reforms took effect slowly. Trial juries were a crude instrument, to be treated roughly; they were sometimes shut up without food or drink until they agreed. Even in the fifteenth century it was a regular practice to bribe the sheriff to return a favorable jury, and to bribe the jurors themselves.

Secondly, England was far in advance of other countries of northwestern Europe in the administration of justice. The Norman conquest had given it the inestimable advantage of a "common law," national in scope, while on the Continent different regions had their own particular codes; and such English lawgivers as Henry II and Edward I were ahead of their contemporaries by a hundred years or more.

EXAGGERATED PRAISE OF THE FEUDAL SYSTEM

Before we leave the period of feudal government, which we may place as contemporary with that of the early manor, say 1100-1300 in round numbers, we must return for a brief appreciation. Some authors view it as a golden age in the world's history. An American, eminent in his contribution to our Gothic architecture, terms it "the nearest recorded approach to the Christian commonwealth," in that "every man was an integral part of a small, manageable and personal group"; "out of this orderly organization grew the sense of honour, and of faithful personal service on the one hand, of generosity and protection on the other." Other authors, from the eighteenth century to the twentieth, have agreed in their praise of the feudal organization and in their regret that it has passed away. These views seem to accord ill with the somewhat sordid picture of conditions which has been presented in these pages.

Here it is necessary to distinguish ideals and facts. In feudal theory one feature was wholly admirable. It imposed on property duties as well as rights. Tenure and service were to be always in balance. The proud motto of the Prince of Wales, borne for 500 years, "Ich dien"—I serve—was the essence of feudal theory. Many regret that this feudal principle faded away almost to nothing in the course of time, and hope that it may be regenerated. Another ideal rooted in feudalism again is cherished at the present day, "noblesse oblige," rank imposes duties.

We may subscribe to these ideals but must still ask how the system actually worked, how men got and held property and rank, how faithfully they fulfilled the obligations to society which property and rank imposed upon them. Answers to the question of fact have been merely suggested in this book; they are given in detail in countless other books open to the interested reader.

Only let him beware lest he accept fancies for facts. Much that has been written about chivalry, the aspect of feudalism most prominent in literature, is wholly misleading. The knight errant, singing the praises of his lady, commonly left at home a wife whom he maltreated. The position of women remained low throughout the period.

CONTRIBUTION OF TOWNS TO IMPROVEMENT OF GOVERNMENT

As the chronology has been roughly blocked out in this book the period 1100–1300, the time of the early manor and of feudalism, was also the time when towns sprang up and grew. Imperfect as was feudalism as a system of government it offered at least an approach to a settled order, in which groups of traders and artisans could buy protection and could begin regular exchange with the country districts immediately adjacent. The unit of economic organization, in which production and consumption centered, was no longer the little village by itself but a combination of town and country, in which there could be a specialization of function and a regular exchange of products. The change undermined the manor, as has been told in the last chapter. In the field of politics it made possible an advance by which feudalism was transformed into a better if still imperfect system of government. It spread the use of money so as to make possible regular taxation and a salaried administration. From time to time in the preceding period kings had imposed money payments on their subjects. Domesday Book itself was designed to aid the king in collecting money. These money payments, however, were irregular and exceptional. Tenure and service were the basis of feudalism. A lord supported the king by rendering service, military and judicial, and supported himself by the produce of land which he held and by the fees which he collected. In a sense he paid his own salary, and was as independent of the central government as might be expected under those conditions. Improvement in government required payment to it in money instead of payment in kind (service), regular payments in place of occasional, large payments instead of small. By furthering the circulation of money the rise of the towns made possible this political improvement.

CIRCULATION OF MONEY

Metallic money had never disappeared entirely from western Europe, but became so scarce that exchange was commonly by barter. To illustrate, an Anglo-Saxon law read "If a man buy a maiden with cattle, let the bargain stand, if it be without guile, but . . . if the cattle be diseased or maimed, or the goods otherwise defective, let them be returned, and let the price of the bride be paid for in hard money." Common instruments of exchange in this period were more or less standardized; a cow, to be "legal tender," must be not over eight years old, sound in horns, hoofs, udder and tail; one ox was made equal to six pigs; and so on. Even in this period coins were minted, and were often referred to as a measure of value, but they were not a common medium of exchange.

With the rise of the towns and extension of trade money came back into circulation. The precious metals, which had flowed to the east after the decline of Rome, were brought back in considerable quantities during the Crusades, and mining developed, particularly in central Europe. The process was gradual, and it is impossible to fix a date at which a "money economy" was established. An index of the general circulation of money is furnished by the introduction at exactly the same date, 1188, both in England and in France of the Saladin tithe, a general property tax payable in money.

Up to this date coinage had been on a silver basis, and the silver penny had been the standard unit. Gold coins had been used in Moorish Spain and in Constantinople, and the minting of the florin at Florence, 1252, marked the spread of gold coinage to the Christian west. Gold coinage began in France and England a few years later. The use of the more precious metal was evidence of the growth of larger transactions in business and at the same time an influence to further them. The ratio, which in time came to be about eleven silver to one gold, varied in different countries, and changed from time to time. The student of the theory of bimetallism will not need to be told that this made difficult the maintenance of any standard, and in fact it caused a flow of precious metals back and forth, in spite of savage penalties on export, for which London merchants were actually drawn and quartered.

THE CASH NEXUS

Carlyle was bitter in his criticism of the "cash nexus," the web of money relations which bind the members of modern society. Each one of us has his credits and debits, money coming in from different sources, money expended in different outlets. If these money relations were expressed by visible bonds they would show a tangle of strands always changing and apparently inextricable, binding us all. The moralist may condemn the strength of these bonds at the expense of other social relations, but the economist must accept them as given in fact, and may seek to justify them by reference to a purely economic measure, the production of goods. Money, "the root of all evil" from one point of view, has been, from another, an indispensable instrument in furthering material progress. Only by means of it did an exchange economy develop in which families ceased to be self-sufficient but sold their goods or services and bought their goods for consumption. Only in that exchange economy did the highly complex forms of cooperation develop which utilized human and physical resources to raise so high as has been done the general standard of life. Only money prices offered a regulator, largely automatic in action, to direct the economic course of society. If the socialist contests the virtue of an exchange economy and asserts the superiority of his plan he may say what he pleases regarding the future; he has no part in the past.

DEBASEMENT OF COINAGE; PUBLIC FINANCE

Money performed this service in spite of the fact that it was often very bad money. Medieval princes, pressed for funds, would reduce their debts and possibly increase their current resources by debasing the currency. Sometimes they would reduce the amount of precious metal in the coins minted; sometimes by proclamation they would establish a new exchange ratio for a certain unit. In France, 1350-55, there were 81 proclamations seeking to alter the value of money; in twenty years the value in silver of the most important unit, the livre, fell to one-tenth. England fared far better in this regard than the continental countries, in most of which there were spasms of inflation.

The reader is doubtless familiar with the English symbols

£, s. d. They are abbreviations of Latin words: *libra*, *solidus*, *denarius*. In the time of Charlemagne, as in modern England, the pound was divided into 20 shillings of 12 pence each. Carolingian silver pennies which have been found and weighed show that the pound would really have contained a pound of silver if it had been minted. Note now how units starting in the pound have fared, taking values as they were about 1900. In gold values, sterling was best, nearly \$5. The French livre (cf. libra) had sunk before the Revolution to about \$0.20. The Italian lira (cf. libra) was worth about the same. The English shilling and the French sou, a popular money of account, started equal in the solidus. Before the first World War the shilling was about \$0.24 and the sou had dropped to about \$0.01.

Before money came into general circulation kings had to live largely off their private estates, and were in desperate straits to raise money for the purposes of government. An English document of 1130 shows that the royal treasury used every possible means to raise funds. Men paid to get into office and to get out of it; heirs paid to acquire an inheritance; an endless string of landowners paid for different things; some paid in dogs, one paid in falcons. Anything was made the pretext for a fine and judges were to a large extent revenue officials. If a peasant was killed by a kick of his horse or a fall from his boat, or was crushed by his cart, the offending animal or object, which before had been "deodand," forfeited to the service of God, was now confiscated by the treasury.

Space is lacking to describe the development from these crude beginnings of a regular system of taxation and public finance. The details will be found in constitutional and political histories. The reader must refer to those sources for an account of the development.

DEVELOPMENT OF ECONOMIC POLICY

Under feudalism anything approaching a "planned economy" was impossible. The central government was struggling for bare existence. It lacked the information and intelligence needed to enable it to make rules to guide the development of society; it lacked ability to enforce rules if they had been made. With the improvement of public finance and with the appearance of the

national representative assemblies which accompanied it legislation in the modern sense became possible. The date of the change may be set roughly at 1300.

In England, before Edward I (1282-1302), the king, acting with the advice of his feudal council, had established a system of common weights and measures, had established "assizes" standardizing the production and sale of bread, ale and woolen cloth, and had forbidden the forestalling (buying up with intent of resale) of necessities. How far England still was from national economic unity appears in a statute of 1275 which provided "that in no city, borough, town, market or fair, there be no foreign person, which is of this realm, distrained for any debt whereof he is not debtor or pledger." The inhabitant of one town was still a foreigner in another, and his fellow citizens might be held liable for his debts even though they had no business connection with him. This statute, re-enacted later under the title of Statute of Merchants, simplified and regularized the process of debt collection, and was but one of a series of measures designed to afford a sound basis for extended business relations. While Edward I and his successors were consciously studying and improving the public laws which regulated social and economic relations, merchants were themselves adopting better codes of conduct, which had been developed by Mediterranean peoples. Mercantile and maritime codes came into use which aimed at simplicity, rapidity and economy of procedure, in contrast to the formality and delays which hindered the transaction of business under the rules inherited from a primitive society.

The national representative assemblies, called into being to support the king in his quest of revenue, were still a promise for the future rather than active initiators of progress. Parliament in England, the Estates-General in France and similar bodies representing three or four feudal classes in other countries were as yet better qualified to follow than to lead.

EARLY CREDIT RELATIONS

In modern society we are bound together not only by a cash nexus but by a credit nexus, a web of relations representing the exchange of present goods for promises to repay in the future. Some of us neither borrow nor lend, but they are few. Most

prudent people endeavor to "save" in the form of life insurance, bank deposits, or investment in bonds or mortgages; many are debtors to shops where they have charge accounts, or borrow to build homes. Credit transactions increase in size and importance as we rise above the simpler members of society and approach the key positions in trade, industry and finance, by which the activities of the whole society are in large degree determined. A collapse of credit would involve a collapse of civilization.

Credit relations appear even in a primitive society, when war or famine, the death of an animal or burning of a house imperil a family's existence. In the Carolingian period loans were not uncommon, although the debtor might not pay interest in money but might "work out" the debt by so many days of labor until it was paid. The most important lenders of the period were the great landowners, particularly the monasteries. These amassed funds of liquid capital from gifts, dues, and privileges, and made loans for all sorts of purposes. Some of them sold annuities and pensions, and took practically the place of life insurance companies. The Knights Templars, originally a crusading order, became a great financial company, whose wealth tempted the King of France to its confiscation.

Besides the church, in this early period, the Jews were an important source of loans. With their talent for trade, their geographical dispersion combined with close relations among themselves, and their fund of precious metals connected with Oriental trade, they were particularly qualified to engage in money lending. Down to about 1100 they were so useful that they were tolerated. When they were no longer indispensable they were persecuted.

DEVELOPMENT OF CREDIT

About 1100, with the rise of the towns and extension of trade (note the First Crusade, 1095), credit transactions developed in two respects.

Professional Christian money lenders came up from southern Europe to supplant the Jews. They were indiscriminately called Cahorsins, from the town Cahors in southern France, or Lombards, from the province in northern Italy. Even now there are a hundred Lombard Streets, it is said, in European towns; and of

course Lombard Street, London, became famous as the center of the greatest financial district of the world. Enjoying by reason of their religion an immunity which was denied the Jews, they attained commanding positions in new branches of trade, and in papal and royal finance.

In the second place, loans to further production grew in volume. Most loans previously had been for economic consumption, whether made to princes for war or lavish expenditure, or to simpler folk to rescue them from catastrophe. Loans of this sort persisted, and were largely the means by which early English usurers like William Cade and Adam de Stratton attained wealth. Alongside them now appeared loans to artisans and petty traders, to enable them to conduct and extend their business. These loans were commonly made on collateral security, in which some valuable object, preferably itself returning income such as a field or house, was pledged; the modern German term for such a loan is still "Lombard loan." In wholesale trade credit transactions were common, and the bill of exchange, which came into general use after 1200, furnished a ready means to finance them. Banking, already developing in Italy, did not reach northern Europe in the medieval period, but the great fairs, like those of Champagne which developed in the thirteenth century, served as clearing houses in which large volumes of credit transactions were settled.

The church in principle forbade loans at interest, but there were so many ways to evade the prohibition that it had little practical effect. The rate varied according to the time and place and nature of the transaction. On small loans for consumption it might be several hundred per cent. The Lombards in Germany made their small loans on collateral usually for one or two pfennigs per pound per week, equivalent roughly to 22 or 43 per cent, more commonly the latter. On first-rate landed security the rate might be 10 per cent or even less.

CAPITALISM

In this medieval period, of which we are now closing the survey, scholars have sought the germs of modern capitalism. Without attempting a formal definition of the term we may suggest as elements in it the control of economic activities by a

group, the capitalists, who by means of their own and borrowed capital profit by the labor of others, reduced to work for them. Stages of economic development, with different characteristic concepts, would appear as follows:

No exchange	Utility	Manor
Money prices, but customary	Value	Early town
Competitive prices	Profit	Extended trade

The problem is to determine when this last stage merges into another, capitalism, in which a special class has become dominant in economic society. The answer to that question will be spread through this and following chapters. To fix a definite time and place for the emergence of capitalism is hopeless. Even the rough scheme of stages presented above offends against reality by simplifying it. Capitalism is a thing so complex that it could not possibly appear all at once, full-grown, as Minerva is said to have been born. Its elements appear in different combinations in different times and places, until at last we can say with assurance that society has entered on a new stage.

SOMBART'S THEORY OF CAPITALIST ORIGINS

A German author, Werner Sombart, who was a leader in the discussion of the subject, asserted that capitalism was marked by a new spirit, not found in peoples outside Europe or in European peoples of an earlier time. He admitted greed as common in human nature, but thought that people sought to gratify it by extortion in political and social relations, by robbery, even by magic, seeking by alchemy to transmute base metals into gold. He asserted that the idea of "making money" by economic means was something entirely new, not found even among economic producers. Even traders and craftsmen aimed only at making a living appropriate to their class, he thought, and had no idea of making money.

Further, he thought that the new spirit, to be effective, must have at its disposal a considerable fund of ready money. Most of the cash funds were in the hands of people who thought only of spending them, in war or in lavish living. Traders and craftsmen, aiming only at a living and working on a very small scale,

could not accumulate funds. He pointed out as the one possible source the great fortune to be derived from ownership of real estate in the growing towns. We are familiar with such fortunes at the present day, for example those of the Duke of Westminster or of the Astor family, based on the growth of London and New York. It seemed plausible that the relatively few people settled on a manor, if they could establish rights to ownership of its land, would make immense gains from the "unearned increment" as the manor grew into a town and then into a considerable city. From this source, conceivably, came the funds sufficient to start capitalism on its career.

These features of Sombart's great work are presented here as examples of the method by which economic history advances, not as explanations of the facts. They stimulated further research by which they were abundantly disproved. Traders and craftsmen, from earliest times, sought to make as much gain as they could. The principle of a limitation to a living appropriate to the class was, like other principles of the time, honored as much in the breach as in the observance. The funds in which capitalism got its start came from a great variety of sources, mercantile and industrial as well as other. The gains from the "unearned increment" were not concentrated and applied to business, but were distributed among different classes and many individuals, and were passive rather than active in the development of economic society.

PRECONDITIONS OF CAPITALISM

An explanation of the rise of capitalism must refer to other facts which made it possible and natural. Based as it is on a set of contracts expressed in money, capitalism must wait for its emergence until money had come into general circulation. Further, it must wait until the substance of law and the administration of law had developed so far as to encourage the process of contracting. Obviously the embryo capitalist would employ workers and agents, and enter into agreements with others of his own class, only if he could count with some assurance on the outcome of his plans. He must have not only a settled order of society, free from violence; he must have a society sufficiently advanced to formulate rules under which valid contracts could be

made, to provide procedure for enforcing them, and remedies if they were broken. Always in the background of economics we have some system of law and government with which there is vital connection. In some parts of this chapter we have crossed the frontier. Conditions have been suggested which hindered regular business activity in the feudal period, but space is lacking to describe in detail the improvement in government and laws that made possible the economic advance of the later Middle Ages. Books on constitutional and legal history will fill in the picture for those who seek this information.

Further, society must furnish to the would-be capitalist a stock of labor available for his use, for his "exploitation" if one prefers the socialist term. This condition has been met in most stages of social development. A proletariat, in the sense of a group who had bred progeny to an extent which forced them to depend on others for subsistence, existed under the tribal system, in the manor and in the town. They entered into the service of capitalism when they sold their services for fixed money wages and enabled their employer to realize a surplus value, profit, from their exertions.

BUSINESS RECORDS AND CALCULATIONS

Capitalism implies, of course, something more than individual cases of money contracts and "profiteers." It implies a society in which the capitalist group has risen to a dominating position, determining the economic activities of the great mass of the people. Before it could reach this stage the leaders must be qualified to take a broad view of business affairs, to know where, when and how a profit could be made, further to know if a profit had been made or a loss incurred, and how much of either. The advance from custom to contract required for success a carefully reasoned analysis of business affairs, exact quantitative measurement of business transactions, and such accurate records as would permit analysis and so furnish a guide to policy.

Sombart exaggerated when he asserted that few even among the professional merchants could read and write in the medieval period. An analysis of Venetian documents about 1200 shows that of 378 only 44 were signed by a mark instead of the written name—say 12%. Even in northern Europe, less advanced,

illiteracy was rapidly diminishing in the class of merchants. A more serious difficulty confronted the medieval business man. He must constantly record figures on which to base his necessary calculations. The only numerals known to him were offered by the clumsy Roman system. Let the reader accept the challenge of a modern writer, to work out (in Roman numerals) the problem of a Parisian draper selling a quarter of a yard of cloth priced at 7 livres 10 sous 4 pence the yard. Actually he would work in round figures, as illustrated above in the case of interest charges, and would be content with approximate results. At the English exchequer, as the word implies, a checker board with counters was used for calculation, and notched tallies were used for records.

IMPROVEMENT IN METHODS OF CALCULATION

Sombart chose the year 1202 to date the birth of modern capitalism. In that year Leonardo Pisano published his *Liber Abbaci*, teaching methods of exact calculation for business purposes by the use of the abacus or counting frame, familiar now as a toy for children. With its help the four fundamental operations of arithmetic could be managed; and, as Orientals now demonstrate, an expert could attain surprising proficiency. The application to business may be illustrated by a story in Leonardo's treatise of a merchant of Pisa who went to Lucca, doubled his capital and expended 12*d.*, then to Florence with the same result, then back to Pisa again with the same result, and had nothing left. Sombart, obsessed with the idea that the early merchant sought not profit but a mere living, thought the example showed he was lucky to get even that. The example is better interpreted as showing the importance of capital. The merchant would reach the result indicated if he started with 10½*d.* If he had 12*d.* to begin with he would come out even, if he had only a little more, 13*d.*, he would come out with 20, and a start with 24*d.* would lead to a finish with 118*d.*

Ultimately of far greater importance was the introduction of the Arabic system of numerals, in which simpler symbols were used for figures, and—the decisive improvement—a symbol for zero enabled a figure to be given importance by position. Known in Italy soon after the publication of Leonardo's treatise, the

Arabic numerals came only gradually into use. At the very end of the century the money changers of Florence were required to use the traditional Roman or to write out the sums; Arabic numerals were thought to be so easily falsified as to make poor business records. Even to the end of the medieval period Arabic figures were scarcely used in northern Europe, but their greater compactness for records and incomparable superiority for computation brought them into general use after 1500.

ACCOUNTING

Northern Europe borrowed also from Italy improvements in the methods of keeping accounts which were essential to the rational conduct of large business undertakings. Account books of German merchants, dating from the fourteenth and even the fifteenth centuries, were really mere scrapbooks, mixing together all sorts of operations—purchases, sales, rentals, dealings in currency and credit, partnership and company commitments, and so on. Memoranda of this sort, serving well enough the purposes of a petty shopkeeper, were quite inadequate to guide the activities of a considerable business man. The growth of credit transactions, and the spread of various forms of commercial association, required some means to show readily the exact position of a business at any time, and the directions in which it was gaining or losing. Such a means is furnished by double entry bookkeeping, which enters every item both in the journal and in the ledger, with a balance of debits and credits, and which, in its developed form, classifies items under the heads of persons, stock, expenses, profit and loss, and capital. The first clear case of double entry bookkeeping appeared in the communal finance of Genoa, 1340; it was soon taken up by Italian business men and applied by them at home and in their agencies abroad. A treatise by Luca Paciolo, 1494, spread knowledge of the system; the first English book on the subject is said to have been published in 1569.

We may concede the truth of Sombart's assertion that capitalism without double entry bookkeeping is inconceivable, even if we cannot follow him in all his ideas on the subject. He relates the principle of quantification, inherent in the new system, to the work of Galileo and Newton, and says that modern natural science, founded on strict causality, was born from the ledger.

The distinction between the enterpriser and the enterprise, making the proprietor as a third person a creditor of the business, released the enterprise from human bonds, he thinks, made it a sort of Frankenstein, with laws of its own outgrowing all human measure.

QUESTIONS

- What is the distinction between politics and economics?
- What were political conditions when the manor developed?
- What was the feudal system; what were characteristic faults?
- What were characteristics of the social organization?
- What were characteristics of the legal system?
- Illustrate by reference to the cases of Ailward, of Richard of Anesty.
- Illustrate improvement and persistent faults.
- What principles of feudalism are to be commended? Compare the facts.
- What were the essential factors of political improvement, and how did the towns contribute?
- Sketch the early history of European money, of coinage, of bimetallism.
- What did Carlyle mean by the "cash nexus"? What are its good and bad sides?
- What were characteristic faults of early money? Illustrate by £, s., d.
- Illustrate the difficulty of raising public revenues.
- Sketch the gradual development of national economic regulation.
- Illustrate the early forms and agents of credit relations.
- Sketch features in the development of credit. What were usual rates of interest?
- Distinguish stages in early economic development. Distinguish elements in capitalism.
- What is Sombart's theory of the origin of capitalism?
- What were preconditions of capitalism?
- Explain its dependence on business records and calculations.
- Illustrate improvements in methods of calculation.
- Sketch the development of systematic accounting.

READING

On the political institutions of the period the student should consult the general manuals of European history, and follow up their references on the subject in which he is interested. C. Seignobos, *The Feudal Régime* (N. Y., 1902), offers a good sketch of feudalism; T. F. T. Plucknett, *Concise History of the Common Law* (Rochester, 1929), is a good survey of legal development.

F. L. Nussbaum, *History of the Economic Institutions of Modern Europe* (N. Y., 1933), presents an introduction to and synthesis of Sombart's great work on capitalism, which, unfortunately, has not been translated. A reader will get some conception of Sombart's ideas and of

his vigorous presentation from his *Quintessence of Capitalism*, ed. Epstein (London, 1915), or from his article on Capitalism in the *Encyclopaedia of the Social Sciences*. The most serviceable book for general reading is probably H. Sée, *Modern Capitalism* (N. Y., 1928). R. H. Tawney, *Religion and the Rise of Capitalism* (London, 1926), will be of most use in connection with the next chapter, but contains an excellent introduction on the medieval period. A bibliography of medieval capitalism will be found in *Economic History Review*, 1933, 4:212-227.

Medieval background of capitalism. (Tawney, chap. 1, pp. 1-62.)

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Currency, credit, capitalism. (Heaton, chap. 10, 179-198, bibliography.)

First manifestations of capitalism. (Sée, chap. 1, pp. 4-26.)

English *nouveaux riches* in the fourteenth century. (Law, in *Transactions of Royal Historical Society*, 1895, 9:49-74.)

Stages in the social history of capitalism. (Pirenne in *American Historical Review*, 1914, 19:404-515.)

Sombart on capitalism. (Parsons in *Journal of Political Economy*, Dec., 1928, 36:641-661.)

CHAPTER V

Transition from Medieval to Modern

CHANGES ABOUT THE YEAR 1500

The medieval period closes with the year 1500. The date, of course, is arbitrary; conditions in the year 1501 were not very much more "modern" than those in 1499. But those in 1600 were so different from conditions in 1400 that obviously the European world had entered on a new period of development, and it is convenient, even if inaccurate, to choose a definite point from which to date the change.

In fact the choice is quite permissible. Let the student reflect on the significant events which cluster about the year 1500. The capture of Constantinople by the Turks (1453) hastened the development of the Renaissance by driving Greek scholars and culture to the west. The discovery of America (1492) and of the sea route to India (1497-98) initiated the period of world commerce by direct voyages to distant continents. The accession of the Tudors in England, of Ferdinand and Isabella in Spain, of Louis XI in France, changed abruptly the nature of government in those countries, and marked the beginning both in domestic and in foreign policy of a new period. The Protestant Reformation (1517) was not merely a denial of the supreme authority of the medieval church; it had far-reaching effects on politics and is credited by some scholars with a decisive influence on economic development. The influences which led to these events, the results which followed from them, were so interwoven as scarcely to be disentangled. In all fields of human activity they changed so greatly the life of the time that Europe clearly had entered on a new, the "modern" period.

EFFECT OF AMERICAN SILVER ON PRICES

The most striking events of an economic order, the geographical discoveries expanding the field of commerce, needed

time to prove their full importance. Economic interests of the European peoples were centered in their own continent, for the most part, until improvements of transportation on sea and land brought other continents nearer to them. In one respect only, in the import of precious metals from America, did oceanic trade have an early and very important effect.

Through most of the medieval period the price level of Europe had been rising; a shilling would buy far less in 1400 than it would have bought in preceding centuries. After 1400 there was a considerable fall, rendering difficult the collection of taxes and of debts. Apparently the currency was not keeping pace with the increased demand for its use in business transactions, and could finance them only at a lower level of prices. Soon after 1500 prices had begun to rise again; the output of the European mines had increased considerably, and perhaps the improvement of credit instruments furthered the rapidity of circulation. Beginning about 1520 prices began to rise further, slowly at first, then more and more rapidly.

American treasure had at first little effect on this movement. The metal first imported from the New World was gold, from the Caribbean islands. After 1530 the Spanish conquerors got access to stocks of silver on the continent, and about 1550 the flow of silver turned into a flood, as rich mines were discovered at Potosi in Peru and elsewhere, and as the introduction of the amalgamation process made easy the reduction of the precious metal. In a century and a half, 1503-1660, the addition to the stock of silver in Europe was over 600 million ounces, enough to multiply several-fold the most important element of the currency.

THE PRICE REVOLUTION

The rise in prices attending the import of American treasure was irregular, but was general in European countries as the silver was gradually distributed among them. It was less, apparently, than would be assumed by the crude quantity theory of money; increase in the stock of money was only one factor in the price revolution, although it was unquestionably the most important. The cause of their troubles was hidden from the people of the time, who ascribed the rise to monopolies, to specula-

tion, to the extortions of merchants or to the lavish expenditures of consumers. One man of genius (Bodin, 1568) saw the relation to the change in the stock of money, but had no influence on the course of events.

A statistical basis is lacking for any exact statement of the change in the price level. It may have doubled before 1600, and tripled by 1650, before the flood of silver had spent its force. Debasement of the currency intensified the change. England in previous centuries had been conservative in comparison with other countries in reducing the weight of fine metal in the coins, but for a brief period in the sixteenth century suffered from a sharp debasement which was not wholly remedied by a recoinage under Elizabeth.

THIRST FOR MONEY; LUXURY

Among the many elements of change, illustrated in the first section of this chapter, the sweeping rise of prices was only one factor. If it is made to serve here as an introduction to the analysis of conditions the student must guard against the assumption that it was the only force at work.

The flood of precious metals, with the resulting price movements, had in itself a tremendous psychological influence. Before it came the thirst for money was already acute. Voyages of exploration were buoyed by the hope of finding El Dorado, the land where gold was to be had for the taking. Columbus is credited with saying, "Gold constitutes treasure, and he who possesses it has all he needs in this world, as also the means of rescuing souls from Purgatory, and restoring them to the enjoyment of Paradise." "*Pecuniae obediunt omnia*," said Erasmus. Alchemy, as a means of transmuting base metals into gold, was widely practiced; Sombart says, doubtless with exaggeration, that there was scarcely a monastery in which some furnace was not used in the process.

Money was wanted for two purposes. Some people wanted it as a means to make more money; their activities will be described later. Most people wanted it to finance a luxurious expenditure which was characteristic of the time. An English author of the sixteenth century complained that a nobleman's clothes cost 20 times what they had cost a half-century before, that "in

delycyous meates, drinckes and spyces" 4 times as much as formerly were spent. Another said that twenty years before there were not in all London a dozen haberdashers selling foreign trifles, but now (in modern spelling), "from the Tower to Westminster along, every street is full of them; and their shops glisten and shine of glasses, as well looking as drinking, yea all manner vessels of the same stuff; painted cruses, gay daggers, knives, swords, and girdles that is able to make any temperate man to gaze on them, and to buy somewhat, though it serve to no purpose necessary." Another complained that the new-fangled chimneys, now drawing off the smoke of the fires, had made people delicate and caused an increase in catarrh and colds. The stage was being set for the reaction of Puritanism, with its demand for a return to the simple life.

EFFECTS ON CLASSES

Feudal classes had been declining in power long before 1500. The armored knight on horseback had lost his military importance with the introduction of fire arms. In England the Wars of the Roses had set the nobles to fighting each other, and exterminated so many that of present peerages few can be traced back beyond this time. Now the rise in prices was a bitter blow to lords who still held their lands. They had for the most part commuted dues from land into fixed payments, and faced rising expenditures with stationary incomes. English colleges, themselves great landlords, cut down their chapel services, ceased to buy books, abandoned wine for small beer, gave up their feasts. Always improvident, the landlords incurred heavy debts and must sell out to men who had made money in business, and who now managed landed estates on business principles. The literature of the time contains many complaints against "upstarts" and "upskips," who rose from lower ranks to occupy in social and political life the positions formerly held by feudal and manorial lords. Both in England and on the Continent the old nobility of birth was diluted or supplanted by a new nobility, created by letters patent, and derived often from the humblest levels of society.

The classes which gained by the rise in prices were obviously those which made fixed payments for the lands that they held,

and in industry and trade the business men who could forecast the change and take speculative positions which multiplied their values.

EFFECTS ON LABOR

One class which lost, as it always loses, by the monetary inflation was that of the wage laborers. In England the preceding century has been pictured as their golden age, in which by a day's work a common laborer could earn three-quarters of a bushel of wheat, and all could live in comfort. Conditions in France were similar, although the standard was not so high. The course of the fortunes of the unskilled English laborer is pictured in the following table, which cannot, of course, present reality with the precision which the figures suggest, but of which the broad outlines appear to be trustworthy.

	<i>Cost of living</i>	<i>Money wage</i>	<i>Real wage</i>
1451-1500	100	100	100
1501-1520	104	87	88
1521-1550	110	74	70
1551-1570	167	95	57
1571-1602	242	121	47
1603-1652	360	152	40
1653-1702	399	192	47

THE POLITICAL REVOLUTION

In politics no less than in economics the period after 1500 was an era of revolution, no less, indeed, than the time of the French Revolution of 1789. With almost startling suddenness three great states arose out of apparently hopeless anarchy, England after the Wars of the Roses, France after the Hundred Years War, Spain after the war with the Moors. The political changes, conditioned in large part by the previous economic development, were destined by their reactions to exercise a decisive influence on the economic history of the future.

The feudal political organization had been instinctive and unconscious. Working with traditional instruments rulers had attempted as best they could to supply the essential services of government. The state as a work of art, a product of reflection and calculation, appeared first in Italy, and developed in northern Europe as the demand for a better political system became

insistent and rulers like the Tudors in England and Louis XI in France presented themselves to meet the demand.

If the basis of this modern state, dynastic absolutism, the theory that a certain family is called by the grace of God to exercise supreme power, offends against modern principles, it was suited to its time. The theory is simple and intelligible; and in practice it worked. People who wanted something done at home and abroad supported a government which could do it. Theorists could appeal to the "police power," that vague conviction that somewhere and somehow every government may act for the good of its subjects. The spread of Roman law, itself the product of an absolutist state, supported absolutism. The Reformation made it seem natural: "To the Calvinistic view God is the ideal type of an absolute monarch."

The absolute monarchy passed through different stages: confessional ("*cujus regio, ejus religio*") ; court ("*l'état, c'est moi*") ; enlightened ("*le roi c'est le premier serviteur de l'état*"). In whatever form it was always in the background, conditioning economic development in this modern period.

IMPROVEMENT OF ADMINISTRATION

Without an improvement of administration through which to exercise its power the new monarchy would have been helpless. Now first the central government was organized with a distribution of functions which enabled it to perform its various services with some efficiency. Some of the court officials of the feudal past kept their places, notably in England, where three high offices of the present (Chancellor of the Exchequer, First Lord of the Treasury, Lord Chancellor *) trace back to medieval origins. More significant is the appearance of secretaries of state, in their origin mere clerks, but now entering the royal council and exercising important influence on policy as well as on the administration of the laws. Kings had previously called in ecclesiastics to help them, but now they began to rely largely on representatives of the middle class. Henry VII of England and Louis XI of France both initiated a new policy in that regard, and Henry VIII gave Thomas Cromwell, the son of a Putney manu-

* Even now the Lord Chancellor is always elevated to the peerage.

facturer, a position of power second to none but himself. To build up, in the capital and in the provinces, a corps of officials, able, honest and devoted to the public service, was a task that required centuries for its accomplishment. Compared with present standards the best administration was full of faults, too numerous to be detailed. Nevertheless, it offered a basis far better than the preceding on which to build the intricate economic organization now in process of development.

MERCANTILISM; THE BALANCE OF TRADE

The new states, far better organized than their feudal predecessors, could and did adopt a conscious policy to advance their interests. In different countries the policy varied in detail, but the resemblance in general was so strong that it may be discussed under one head, mercantilism.

The first problem of the state was self-preservation. Wars were almost constant. In the sixteenth century there were only 25 years without war on a large scale somewhere in Europe; in the seventeenth only 21. Between 1568 and 1713 the Netherlands were at war for 116 years out of 145—four years out of five. Conditions therefore required constant military preparation, and, incident to this, strenuous measures to increase the revenues and particularly to hold and increase the stock of ready money. The saying ascribed to an Italian about 1500, that the conditions for success in war were money, money, and again money, characterized the belief of the time. Statesmen and writers on economic subjects were in general agreed that if money did not sum up all wealth it was at least the most desirable form of wealth, and that the stock of "treasure" in the country was a matter of public concern.

The countries of Europe had for centuries endeavored to attract bullion, and then prevent its export by downright prohibition. Mercantilism recognized the futility of the old policy. It sought to reach its end indirectly by measures aiming to maintain a favorable balance of trade, a surplus of credits over debits in international relations which would have to be liquidated in cash. The details of these measures will be found in the history of commerce. The results, so far as regarded the end in view, were negligible. The policy was important as tending to aggravate

the opposition of countries, to stimulate war, and to delay the international organization of production.

PROTECTION

One important aspect of mercantilism was the protection of some classes of producers, particularly the manufacturers, against the competition of foreigners. A home industry, it was argued, was of value to the state by supporting laborers who could contribute to taxes and could supply recruits to the army and navy. It was of particular value if the products could be used to displace imports or could be exported and so influence the balance of trade. Therefore it should be preserved, and fostered, even at the expense of consumers.

A Swedish writer (Heckscher) who has made a masterly contribution to the subject of mercantilism contrasts this policy of "protection" with a policy of "provision" followed in the mediæval towns, in which the interests of the consumer were foremost. In a simple organization of society it was obvious that the interests of all were furthered if goods were plentiful, and the most goods possible were received in an exchange. As the economic system became more complex and goods were produced for sale in money in an uncertain market, obviously producers as such would benefit if goods were scarce instead of plentiful, and would fear an oversupply. If they could impress their interests on the government, and could make their employment of labor appear to be a public concern, the transition to protection would be natural. The process by which the consumer became "the forgotten man" does not appear to have been based on sound economic reasoning, as now understood. The economics of the day, however, was not the modern. It was distinctly "*political* economy," in which the interests of the state obscured the interests of the individual. It is characteristic of the period that its economists could seriously argue that a country benefited by a low wage scale, enabling the export of products which would add to its stock of money. With the bogey of an "unfavorable" balance of trade constantly in the minds of statesmen, with a more intense competition in foreign trade, and with the increase in political influence of the middle classes, the policy of protection was natural and became general.

UNIFICATION; REGIMENTATION

Still another aspect of mercantilism was the effort of the new states to unify their territories, wiping out feudal differences and subjecting all regions to the same general regulations. In most European countries there persisted still many remnants of medieval particularism, local differences in weights and measures, even in currencies and codes of law, tolls on roads and rivers, and even internal customs frontiers, hindering the free movement of goods. The success of mercantilist policy in its effort at unification was irregular and usually incomplete, as will appear later in the survey of different countries.

When the rulers of the period abolished local and conflicting regulations they had no idea of leaving people free to follow their own course without direction from above. National regulation was substituted for local. The period was one of regimentation, regulation in minute detail of all human activities. A French treatise of the eighteenth century on "Police," the term used then for internal policy, covered all imaginable subjects, trade, manufacture, domestic servants, arts and sciences, morals and religion. An extract from Malachy Postlethwayt's great folio *Dictionary of Trade*, published at London in 1751, and based on a French work by Savary, will illustrate. Under the heading Dancing-Master we read: "The reader will doubtless be surprized to find this article in a Commercial Dictionary; nor should we, though Mr. Savary has taken notice of it, was it not to shew the English reader, that every kind of business in France is under suitable regulations; which I have done to convince this nation, that the prosperity and splendor of that kingdom has not sprung from chance, but refined policy."

BUSINESS DEVELOPMENT; GERMANY

From this survey of politics and policy, which has carried us far into the modern period, we return to the sixteenth century, to study some of its economic manifestations, but still with attention to the interrelations of economics and politics.

The failure of Germany to build up a modern state on a national basis was, as will be shown later, the main reason why the German people were passed by others in economic develop-

ment. They must wait until the nineteenth century for political conditions enabling them to show their real economic capacity. Yet in the period immediately under consideration, the sixteenth century, economic progress was nowhere in northern Europe more rapid than in the German cities. The very lack of a strong central government, in the long run disastrous, at the moment freed economic forces from control. To suggest conditions by a metaphor, business took the bit in its teeth and ran away.

Foreign observers were impressed not only by the wealth but also by the rapid pace of life in the German cities. In Nuremberg in the sixteenth century four tower clocks struck the quarter hours, and all citizens were in a hurry to make the most of their time. Forms of association long practiced grew now to the dimensions of "big business," enlisting the interest of all classes and rousing bitter opposition among smaller people in the trades. In mining Germany outranked all other countries, not only in technical competence but also in the number of workers employed, and in the large size of the business units. The characteristic development was a rapid growth in capital and number of employees, with a reduction in the number of operating units. The mine laborers of the time, estimated at over 100,000, presented the characteristic problems of a developing proletariat.

In trade great companies sought monopoly of the most important commodities. A complaint from Innsbrück, 1518, alleged that companies were so powerful by their great capital that they ruined the small dealers and had achieved monopolies in silver, copper, steel, iron, linen, sugar, spices, grain, oxen, wine, meat, lard, tallow, leather. The Höchstetter, the most hated monopolists of their time because they dealt in the common necessities of life, were ruined in an attempt to corner the quicksilver market. Among themselves the companies formed pools or cartels, to reduce competition and raise profits.

There was no government which could control these economic Frankensteins. Their operations extended from Hungary to Spain and Portugal, and in the south to Italy. At home in Germany the imperial government had but a shadow of authority. The Reichstag, year after year, passed laws to restrict and punish the abuses of the companies, but lacked a national administration to execute its regulations.

RISE OF THE FUGGER FAMILY

The most striking illustration of the economic opportunities and also perils of the time is supplied by the history of the Fugger family. In 1367 a simple weaver, Hans Fugger, settled in Augsburg, in southwest Germany. He engaged in trade, made prudent marriages, and left a small fortune (3,000 florins) at his death. One line of his descendants became wealthy, overtraded, and was ruined. Another, represented by his son Jacob, extended the trading operations from cloth to many other wares, established connection with Venice, and left an important mercantile business to his descendants. Of these one, Jacob II, "Jacob the Rich," was a man of outstanding ability, who became the leader of the family group, and built its fortunes up to unexampled height. Sombart presents him as a type of the purely economic man of the classical political economy, "this curious figure with a human face, the homo sapiens Lombardstradarius"; and cites his answer to a nephew who urged him to retire from a risky business and let others make money. "But Mr. Jacob Fugger always said in answer: that would be mean-spirited in him . . . he had a very different idea, he would make money as long as he could."

Under him the Fugger business developed from trade to finance. The family made advances of cash and credit to European rulers, taking for return of interest and capital the yield of certain taxes (as has been done in recent times in China and Turkey), or the administration of royal monopolies. Of these the most important were mining rights. The Fugger got control in this way of the silver mines of the Tyrol and the copper mines of Hungary. For the most part they abandoned merchandise transactions in other wares than the metals, and specialized in credit and foreign exchange. They had branch offices all over western Europe to facilitate the transfer of funds, and made loans to most of the important princes of the time, including the Pope and the King of England. They developed a very important branch of their business in Spain, where Charles V, unable to pay a balance due them, leased to them his income from the three great orders of spiritual knights, consisting of payments in money and in kind; included in the assets were the quicksilver

mines of Almaden, destined to be highly lucrative after the discovery of the amalgamation process.

MONEY IN POLITICS

In this period appeared for the first time in striking form the power of money to shape the course not only of economic but also of political development. It had been apparent even in the Crusades, and even before 1500 Florentine bankers were charged with "ruling" England and the Low Countries (Bruges). The Fugger early showed their power. In 1509 the Emperor Maximilian was to receive 170,000 ducats from allies in the League of Cambrai, to be paid in the course of time at Antwerp, Florence and Rome; he needed the whole sum in Germany without delay. Jacob Fugger gave him part in two weeks, the rest in six weeks, all paid at Augsburg; no comparable transaction had been known before. Two years later, when the Emperor had the extraordinary idea of getting himself elected also as Pope, he wanted to borrow 300,000 ducats to bribe the cardinals, offering 100,000 ducats as interest (!), and as collateral four trunks of jewels and his future revenues. Nothing came of this, but the Fugger practically determined the election of Charles V as Emperor in 1516, a momentous event in European history. The election cost Charles in bribes nearly a million florins, of which the Fugger contributed the larger part. A letter written by Jacob to Charles in 1523, when Charles was behind in payment as noted in the preceding section, is amazing as coming from the descendant of a simple weaver to the greatest potentate of Christendom. "It is well known and clear as daylight that your imperial majesty would not have been able to get the Roman crown without my help. . . . If I had chosen to abandon the house of Austria and back France I should have gained much money and advantage, as indeed they were offered to me."

In another great event of the time, the Protestant Reformation, the Fugger were involved. Tetzl, preaching indulgences in Saxony and the target of Luther's bitter denunciation, put his receipts in a treasure chest, "the box," frequently mentioned in the writings of the time. A representative of the Fugger always traveled with Tetzl, with a key to the box and control of its contents; he remitted half to Rome and applied the remainder

to wipe out the debt of Albrecht of Brandenburg, who had borrowed of the Fugger to finance the transaction.

If Bishop Burnet, the English historian, is to be believed, the sailing of the Spanish Armada for its attack on England was delayed for a year by the patriotism of a London merchant, who bought up so many bills on Genoa that the bank there, the Spanish fiscal agent, could not finance the expedition. And a recent English historian asserts that the great constitutional changes of the seventeenth century were controlled by London merchants who had money to lend.

DECLINE OF THE GERMAN BANKING FAMILIES

For a time the Fugger and other German families (Hochstetter, Haugs) made enormous profits, often over 50%. Starting with capital contributed by themselves, they attracted capital from others which they used to extend their operations. The practice of accepting deposits introduced an element of insecurity, which intensified an inherent weakness of their organization. They remained family groups, depending for leadership on ability not always inherited, shifting their organization every few years to adapt it to changes in personnel, lacking the permanent and efficient administration of a modern corporation. Loans to princes were perilous in a period of frequent war and occasional royal bankruptcy. The venture of the Welser family, in its attempt to colonize Venezuela, was a bold enterprise, but was bad business. Most of the German financial families broke up after a few generations. The Fugger lasted into the seventeenth century, when, it is estimated, they had lost 8 million florins, most of what they had ever gained, in loans to the house of Habsburg. Only those who in good time withdrew from business and invested their gains in landed estates maintained an assured position. The curious who consult the *Almanach de Gotha* will find now listed in it branches of the Fugger family which pursued this course, kept their place and rank among noble families of the present day.

STIMULUS TO CAPITALISM

The foregoing sketch of the Fugger and other German families of the time would seem to show an extraordinary development

in the direction of capitalism. The impression is strengthened if we view an estimate of the total capital of leading financial families in different times and places, roughly translated into modern purchasing power.

Peruzzi, Florence, Italy, about 1300	\$750,000
Medici, Florence, Italy, 1440	7,500,000
Fugger, Augsburg, Germany, 1546... ..	40,000,000

The sixteenth century was, indeed, of critical importance in the development of capitalism, but its manifestations in Germany were premature: as will be seen later they faded away, not to reappear until the nineteenth century. They developed in other countries farther west under the influence of conditions now to be considered.

The flood of silver from the New World and the resulting price movements obviously offered a tremendous stimulus to bold spirits seeking to make money. It paid to extend a business by borrowing when the debt could be repaid in depreciated money. It paid an entrepreneur to push production when the price of finished goods rose much more rapidly than the wages of employees. In another way the development of oceanic trade furthered capitalism. For effective prosecution it required large trading units, and was an important field for the development of the modern business corporation, in the form of the stock company. It offered large returns to swell the capital originally invested. When Sombart says that western Europe grew rich by plundering other continents he has in mind the fact that colonial enterprises made little economic return for the goods which they imported. The Spaniards got their silver from the labor of Indian slaves; the English and Dutch got their eastern wares from tribute imposed on native princes.

Even the luxury of the time was an influence to develop larger business units, since it involved often articles free from guild restrictions, made of costly raw materials (as silk) or by elaborate processes (glasses, sugar), and was affected by risks of credit and changes of fashion. And the wars, while they dissipated capital and absorbed the proletariat, gave still a great opportunity for the rise of "big business," in the financing and provisioning of the armies, and in the supply of uniforms, arms and munitions.

THE SPIRIT OF CAPITALISM

There is no question that business enterprises increased greatly in size and scope after 1500. There is no question that business leaders showed a boldness and persistence in their search for profits, which if they existed before were concealed in small undertakings and were now revealed and on record. The question which we have to face here, on which much ingenuity has been expended, is whether the spirit which animated these leaders, precursors of the modern business man, was not itself something new, which was contributed or at least fortified by some current of thought coming from outside the business world. The argument in brief is that the quest for unlimited gain, beyond any conceivable needs of the individual, is so inhuman and unnatural, and was so opposed to the standards of the preceding time, that this new "spirit of capitalism" could not make its way in a hostile world unless supported by some power from without.

An attempt to relate the spread of the new spirit to the expulsion from Spain of the Jews in 1492 and the following years, and their dispersal in Europe and America, has been generally discredited. Important as were individual contributions of the Jews there is abundant evidence that the new movement was not at all dependent on them and in England, for example, was little influenced by them.

CAPITALISM AND PROTESTANTISM

Deserving more careful consideration is the assertion that the spirit of capitalism was profoundly influenced by currents of thought developed in the course of the Protestant Reformation. A German scholar (Max Weber) noted that in his own country (after 1900) Protestants had an importance beyond their proportion of the population in the ranks of capitalist undertakers, of the educated personnel in trade and manufacture, of the upper grades of labor; he found that Catholic artisans tended to remain in simple handicraft, while Protestants entered the larger organization of the factory, rising to become skilled workers or members of the factory administration. Capitalism appears to have developed by preference in Protestant countries, such as England.

the Netherlands and the United States, rather than in the Catholic countries of southern Europe.

Sombart had called attention to the need of a combination of qualities in the capitalist if he were to win lasting success; he must be not only clear-sighted, coldly calculating, bold and even ruthless, he must have also what Sombart called the "bourgeois" virtues of thrift and prudence to steady him in his career. Weber found in the teachings of certain Protestant sects not only an emphasis on those virtues but also doctrines which in a sense sanctified the zealous conduct of business, and instilled in the business man the conviction that in making money he was doing God's will.

CALVINISM AND PURITANISM

Calvinism was the branch of reformist doctrine which lent itself best to developing economic activity. While its doctrine of predestination seemed to remove any incentive to action, yet it made good works a sign of the elect if not a means to salvation. And as a modern writer says, "If you are sure, in predestination, of your destiny and your eternity, you can exploit the world with immense freedom and confidence." Instead of medieval asceticism and removal from the world it preached activity in worldly affairs, and demanded not only activity but also efficiency.

Some aspects may be illustrated by quotations from Richard Baxter's *A Christian Directory*, published at London in 1673, and summarizing the Puritan ethics of the time. "It is for action that God maintaineth us and our abilities; work is the moral as well as the natural end of power." "It is action that God is most served and honored by." "It is no sin but a duty, to labour not only for labour sake, formally resting in the act done, but for that honest increase and provision which is the end of our labour; and therefore to choose a gainful Calling rather than another, that we may be able to do good and relieve the poor." "If God shew you a way in which you may lawfully get more than in another way without wrong to your soul or to any other, if you refuse this and choose the less gainful way, you cross one of the ends of your calling, and you refuse to be God's steward. . . . You may Labour to be rich for God." In the next

century John Wesley, founder of the Methodists, in a sermon on the use of money gave three directions: "Gain all you can. Save all you can. Give all you can."

MIXTURE OF INFLUENCES

The Puritans condemned the love of riches. Money making was not an end in itself but a means to do good. In the choice of a calling Baxter advised: "Choose not that in which you may be most *Rich* or *Honourable* in the world; but that in which you may do *most good*, and best escape *sinning*." All the same, in emphasizing the virtue of economic activity, and in the rigid discipline which they imposed, the new doctrines certainly contributed to establish the standards of modern business. "Puritanism," says Tawney, "was the schoolmaster of the English middle classes. It heightened their virtues, sanctified, without eradicating, their convenient vices, and gave them an inexpugnable assurance that, behind virtues and vices alike, stood the majestic and inexorable laws of an omnipotent Providence." He quotes from Tyndale's translation of Genesis, xxxix, 2: "And the Lorde was with Joseph, and he was a luckie felowe."

To weigh the exact value of psychic factors in historical development is impossible. Few would now assert that modern capitalism would have developed in just the forms and to just the extent it did without the influences proceeding from the reformation movements. On the other hand few would now agree that these movements of thought determined the rise and spread of capitalism. Conditions in the world of fact, in the fields both of economics and of politics, stimulated the individualism which was the heart of capitalism. Representatives of the new movement found Puritan ethics convenient as a justification of their activities but did not need it as a guide. In some ways, indeed, Puritan teachings were quite opposed to the restless urge of capitalism. They demanded industry and efficiency, but they repressed social ambition, and constantly preached contentment of the individual in his calling.

QUESTIONS

Justify the date 1500 as marking the transition from medieval to modern. Sketch and explain the course of prices in Europe.

What was the extent of the price revolution?

Illustrate the thirst for money.

Explain the effect of the price changes on classes.

What was the effect on labor?

Illustrate the political revolution, sources of its ideas, its forms.

Illustrate improvement of administration.

Explain why mercantilism laid such stress on a stock of ready money.

Explain why mercantilism followed a policy of protection. Contrast the policy of provision.

Explain why the economics of the period was *political* economy.

What were the aims of the mercantilist state with respect to unification?

Illustrate its tendency to regimentation.

Illustrate and explain the economic development of Germany about 1500.

Sketch the history of the Fugger family.

Illustrate the power of money in politics.

Sketch the decline of the German banking families.

What conditions of the time stimulated the development of capitalism?

Explain the theory of the emergence of a new "spirit" of capitalism.

What reasons are advanced relating this to Protestantism?

Illustrate possible contributions of Calvinism and Puritanism.

What may be said in criticism of the theory?

READING

The best book for general reading in connection with this chapter is the translation (abridged) of R. Ehrenberg, *Capital and Finance in the Age of the Renaissance* (London, 1928). Another translation, Jacob Strieder, *Jacob Fugger the Rich* (N. Y., 1931), fills in the picture. Eli Heckscher presents a summary of the ideas of his two-volume work, *Mercantilism*, under the same title in the *Encyclopaedia of the Social Sciences*, and in the *Economic History Review*, 1936, 7:44-54. A review of the book by H. Heaton, in *Journal of Political Economy*, 1937, 45: 370-393, is interesting and important.

On the development of capitalism R. H. Tawney (reference in previous chapter) will be found more readable than H. M. Robertson, *Rise of Economic Individualism* (Cambridge, 1933). Tawney offers a bibliography on modern capitalism in *Economic History Review*, Oct., 1933, 4:336-356.

Characteristics of the period. (Heaton, chap. 12, pp. 224-252.)

Expanding capitalism. (Clough and Cole, chap. 6, pp. 140-167.)

Capital and credit. (Ehrenberg, pp. 21-63.)

The Fugger. (Ehrenberg, pp. 64-132.)

Other German bankers. (Ehrenberg pp. 133-192.)

Antwerp as a money center. (Ehrenberg, pp. 233-280.)

Later history of the Fugger. (Ehrenberg, pp. 334 ff.)

Rise of the modern state. (Figgis, in *Cambridge Modern History*, 3: chap. 22.)

Mercantilism. (Clough and Cole, chap. 7, pp. 195-232.)

The state and economic life. (Heaton, chap. 16, pp. 384-406.)

Capitalism and the continental reformers. (Tawney, chap. 2, pp. 63-132.)

Capitalism and the Church of England. (Tawney, chap. 3, pp. 133-194.)

Capitalism and the Puritan movement. (Tawney, chap. 4, pp. 195-274.)

Weber on capitalism. (Parsons in *Journal of Political Economy*, Feb., 1929, 37:31-51.)

CHAPTER VI

England, 1500-1700

ENGLAND IN 1500

At the beginning of the modern period England still counted for little in European affairs. It was a small state, occupying only the southern part of the island of Britain; union with Scotland came only after 1700.* In economic development it was backward compared with Italy, Flanders or parts of Germany, where manufacture, trade and credit institutions had developed much more rapidly.

The very fact that England (and Wales) offered but a small territory had made easier the problems of government, and had made possible a development of political and legal institutions superior to those of continental countries. The island of Britain was definitely limited by nature; it was not only protected by the sea from invasion, it was also (a matter of equal importance) protected by the sea from the temptation to territorial expansion. The energies of the English could be applied without interruption to the working out of their domestic political problems. Their political development had been intensive, resulting in improvement of the quality of their institutions rather than in their spread over greater area. Their development had been consecutive, with but slight interruption from war or revolution. What they gained from political experience they kept; progress was relatively steady if at times it seemed slow. By the end of the modern period England had become the world's leader and teacher in political and economic affairs, and the British empire had won the position of the world's greatest state.

* The words "England" or "Britain" will be used henceforth as inclusive terms to denote the United Kingdom under the Westminster parliament. When occasion arises England in the narrow sense will be distinguished from Wales, Scotland and Ireland. During the period of union, 1800-1923, all of Ireland is included in matters of foreign trade, but not in other respects.

The political background may be sketched roughly as follows. In the sixteenth century the Tudors governed with absolute power, but, at least under Elizabeth, with a keen recognition of the national interests. The two revolutions of the seventeenth century, against the personal rule of the Stuart kings, made possible the parliamentary government of the eighteenth century and the economic development leading up to the Industrial Revolution.

DISSOLUTION OF MEDIEVAL SOCIETY

In England the sixteenth century was a period of ferment. In contrast with the static conditions of an earlier period, in which people lived and died where they were born, there was a restless movement of people about the country. Vagabonds, "sturdy beggars," tramps or hobos as they would now be termed, appeared everywhere. A statute dating from the end of the century lists the guises under which they showed themselves: "all persons calling themselves scholars going about begging; all seafaring men pretending losses of their ships and goods on the sea; all idle persons going about either begging or using any subtle craft or unlawful games or plays, or feigning to have knowledge in physiognomy, palmistry or other like crafty science, or pretending that they can tell destinies, fortunes, or other such fantastical imaginations; all fencers, bearwards, common players and minstrels; all jugglers, tinkers, pedlers and petty chapmen; all wandering persons and common labourers, able in body, and refusing to work for the wages commonly given; all persons delivered out of gaols that beg for their fees or travel begging; all persons that wander abroad begging, pretending losses by fire or otherwise; and all persons pretending themselves to be Egyptians . . ." [gypsies] were to be whipped and sent home to their own parish.

AGRICULTURE; ENCLOSURE OF OPEN FIELDS

These beggars were the dregs of a medieval society in dissolution. Some had been employed as retainers in feudal families, and were thrown on the world as the remnants of feudalism disappeared. Most had had a place in agriculture, which they had lost as the result of changes now to be described.

The practice of agriculture had improved little down to the fifteenth century. It was still devoted mainly to the production of cereals, and by constant cropping had made heavy demands on the fertility of the soil. Toward 1500 a movement began to improve methods of cultivation, which took on pace as a new class of landowners appeared to direct production, discarding medieval standards.

The great obstacle to improvement was the open-field system, which bound everyone fast in the traditional routine. Toward the end of the Middle Ages this difficulty had been met in individual cases by a process of enclosure. By voluntary agreement or under pressure of the lord the scattered strips of an individual were brought together into a compact block, on which the owner or tenant was free to farm as he chose. The incentive to enclosure grew as the price of grain, the staple product of the old system, failed to rise with increased costs of cultivation, while pastoral husbandry required much less labor and offered much larger return. A tract of arable was estimated (1535) to be worth only half of what it would yield as pasture, little over a third of what it would return if suited to use as meadow for the growth of hay. There was an active demand for wool, both at home and for export abroad, and a great saving in costs in pasturage, by the release of labor. According to one estimate sheep grazing required less than one-tenth of the labor needed on the same area for arable husbandry. So laborers were dismissed, and as Thomas More said, "your sheep, which are naturally mild and easily kept in order, may be said now to devour men and unpeople not only villages but towns." Less important as a reason for enclosure in this period was the introduction of the so-called convertible husbandry, which improved on the traditional course of cropping by shifting the land periodically between grass and grain.

CHANGE IN CONCEPT OF PROPERTY IN LAND; QUESTIONS OF OWNERSHIP

The government passed various laws to prevent the eviction of the rural population by enclosures for sheep grazing, with little effect. Henry VIII, in fact, by his suppression of the monasteries (1536-40) did much to further the dissolution of the

old order. A considerable proportion of the land, a fifteenth or more, passed into the hands of new owners, who were eager to make what they could from it, with little respect for old traditions. Property in land, which had been formerly the base of services to be rendered, came now to be regarded primarily as a source of income. Descendants of manorial lords, improvident and deep in debt, gave place to men of the middle class—merchant adventurers, clothmakers, goldsmiths, butchers, tanners. A sermon of 1550 denounced London merchants, lawyers, courtiers, who used their riches “to bie fermes out the hands of worshipful gentlemen, honeste yeomen, and poor laborynge husbands.” Another sermon, a few years later, illustrated the business spirit of these new landlords: “as for turning poor men out of their holds, they take it for no offence, but say their land is their own.”

Who *did* “own” the land which in the manorial period had been a villein tenement, and on which the labor dues had been commuted? There is no simple answer to that question, and for the complex details the reader must be referred to other books. The characteristic figure, successor to the villein, was the copyholder, holding “by copy of court roll, according to the custom of the manor, at the will of the lord.” Which was stronger, the will of the lord, allowing eviction, or the custom of the manor, protecting the tenant? The courts gave different answers, according to time and place, according to the form of copyhold (by inheritance, for life or for a term of years), according to the origin of the tenement in question, which might have been originally a villein holding or might have been created out of the demesne or waste. Some lost their land; some kept it, and took their place beside the freeholders, whose right to ownership was not questioned. An estimate that some 50,000 small holders lost their land in the reign of Henry VIII serves at least to give some idea of the extent of the change.

MANUFACTURE; HANDICRAFT

In manufacture as in agriculture the two centuries following 1500 were a period of transition and unrest. With the establishment of a strong central government, able to impose peace and order, and devoted to national rather than local interests, medi-

eval forms of organization became antiquated, fell into the background or faded away entirely. Handicraft, which had been the great agent of progress in the development of the medieval town, must make place for an organization better adapted to develop the broader market now open to manufacture.

The craftsman can keep his place when he has an assured market in the neighborhood, and has no serious problems to solve in buying and selling, and can follow time-honored methods in making his goods. But the very fact that he is a manual laborer keeps him bent over his work, and restricts his vision to that which is under his eyes. He does not see the opportunities to make advantageous purchases and advantageous sales at a distance, maybe in large quantities; he does not realize the possibilities of changes in the processes and in the form of his products; he is not able to direct workmen beyond the range of his voice. With the development of society, at different times in different trades, others saw the chance to which he was blind, stepped in and organized the trade; manufacture had advanced to a new stage, variously called the commission, the putting-out, or the merchant employer system.

MERCHANT EMPLOYERS

The active figure in this new stage was the merchant. In the course of trade he had learned to look far afield; he had made it his business to get information about the conditions of demand and supply, at different places and at different times. He knew how to overcome the difficulties of transportation. He made his profit by dealing in considerable quantities of goods, and from bitter experience he had realized that he could make a profit only by careful calculation and by keeping accurate accounts. By correspondence and through agents he had established relations with many scattered people; he had "built up an organization," to use a modern phrase. He had capital in the form of liquid assets, and he knew how to extend it by credit operations. He was the prototype of the modern business man. In all these respects he was far superior to the simple craftsman. The result was inevitable; the brain worker made the hand worker subject to him. The merchant inserted himself between producer and consumer; the middleman took direction of the trade. In

branches like the silk industry, of which the raw material was costly and imported from a great distance, the merchant early got control. He bought the raw silk, distributed it among workmen, but kept his ownership in it and paid them merely a piece wage, then sold the product and made his profit. In the woolen branch, in which the raw material was easily got, he entered the trade from the other end, organizing the market for the finished product in distant towns or foreign countries, and giving out work to be done according to the opportunities of the market at the time. In many districts he built up an industry which had not existed before, discovering there a surplus of unoccupied labor which was available at cheap rates, and which so promised him low production costs and a good profit.

This new stage of industry, that of the merchant employer, had serious faults, as will soon appear. In a debased form it still persists and is known as the sweating system. In its time, however, roughly from 1500 to 1800, it marked a great advance, building up industries, breaking down barriers to trade, satisfying consumers' wants and giving a living, although a poor one, to multitudes of people.

DECLINE OF THE GILDS

The new system of manufacture, directed by the merchant employer, was obviously a departure from the principles of the old craft guilds. These attempted to maintain the rules which had been designed to support the independent handicraftsmen, but were engaged in a losing fight. They merely drove developing industries into the country districts or into towns lacking the guild organization, where industry was relatively free. The national government refused, in general, to support the claims of the towns to a monopoly of manufacture, and took into its own hands such regulation as it deemed necessary.

Even before 1500 the government had taken notice of complaints against the guilds, the "outrageous hardships" which they inflicted, exactions "after their own sinister mind and pleasure," the rules "for their own singular profit, and to the common hurt and damage of the people." Bacon termed the guilds "fraternities of evil," and they came to be more and more criticized, as obstacles to progress. Craftsmen openly refused to submit to their

supervision, and defied their authority. As they lost power they grew remiss in administering the rules governing apprenticeship and admission, and ceased to exercise any useful function. Apart from a few given public authority to test and approve wares (the goldsmiths and gunmakers of London, the cutlers of Sheffield), they gradually disappeared from the scene.

Gilds which had succeeded to the position of the early merchant gilds, and attempted to preserve a monopoly of retail trade for their members, likewise lost their hold. In Chester, 1614, when a man who had married the niece of an ironmonger kept the shop open, the gild had no better resource than to send two members to picket it, endeavoring to dissuade people from purchase; the mayor ordered them to depart, but "they walked and remained and played their wilful part." Mr. Ogle of Newcastle, forbidden by the Merchant Adventurers of that town to sell figs, replied that "if he could make profit he would not onely sell figgs, but sugar allso, and that after the figgs he had were sold he would order to London for twenty barralls more." A law case of 1724, referred to below, settled the question.

NATIONAL REGULATIONS; THE ACT OF APPRENTICES, 1563

The aim of the English government in this period was to substitute general regulation, nation-wide, for the local regulation of the towns. The most striking example of this policy was the Elizabethan Statute of Apprentices of 1563. This was to be for the England of the time what the "New Deal" promised to the United States later, an ordering of the whole national economy in the general interest.

Facing the unrest and vagabondage of the time the act started with the principle that all who had not definite means of support should be set to work; if not otherwise employed they could be required to work in agriculture between the ages of 10 and 60. Elaborate provisions regulated the term of apprenticeship, which was in general to be seven years, but might in fact last considerably longer. For laborers by the day or week the working day was fixed, lasting for the period September–March from daylight to dark, for the rest of the year 5 A.M. to 7 or 8 P.M. Time was to be taken out for breakfast and dinner, and in summer for

"drinking" and a nap, so the longest day would have involved perhaps twelve hours of actual work. Wages were to be fixed each year according to the conditions of the time, in the country by justices of the peace, in towns by the officials, in conference with "such discreet and grave persons" as they thought proper; these rates were to apply to all manual labor, skilled and unskilled, and penalties were provided for any who offered or received more than the legal wage.

In various places the act shows the persistence of medieval class feeling, and it has been pictured as "the most infamous act" on the English statute book. This charge has been disproved by recent investigators; the act worked sometimes against the laborer, sometimes for him. The important fact is that in general the act did not work at all. The government did not have the means to administer such an ambitious measure. The guilds, as indicated above, lost the will or the power to enforce the apprenticeship provisions. Wages were actually assessed in a number of cases,* but long before this feature of the law was repealed (1813) it had become a dead letter.

The act aimed to ease the transition from the medieval to the modern order, and to regulate the competition that was dissolving old institutions. It sought in some of its provisions to protect the town handicrafts, but this act and others like it left so many loopholes open to the capitalist employer that the development of the new organization was not seriously repressed.

ATTEMPTS AND FAILURE TO REGULATE MANUFACTURE IN DETAIL

Like other governments of the mercantilist period the English government endeavored to direct the course of economic development by meticulous regulation. It cherished particularly the woolen industry, the strongest of the time both in the supply of raw material and in its manufacture. A law of Elizabeth required all males over six years old, of the laboring class, to wear a woolen cap on Sundays and holidays; felt hats were better and gradually established themselves, but the records of a Stafford-

* Tawney, 1913, could count 73 distinct and complete assessments, of which records had been preserved,

shire manorial court have been preserved, in which a man was charged with infraction of the act. A law of Charles II required the shroud of a corpse to be of pure wool, and made the minister at a funeral responsible for seeing that the act was observed; at the same time the Scottish parliament passed a law for burying in Scots linen. Malachy Postlethwayt, referred to above, wanted all English wool worked up at home, and proposed "woollen wigs for labourers, &c., which might not only become generally fashionable at home and in our own plantations among the lower class of people, but might perhaps be exported in large quantities to other countries."

Besides these sumptuary regulations the government like the earlier gilds sought to direct in minute detail the processes of manufacture and the standards of quality. For the sake of the export trade, particularly, the government wanted to protect the reputation of English manufactures. "The bungling clumsy workman . . . brings disrespect upon the fabrick or manufacture in which he is engaged, ruins the general sale at foreign markets, and gives our rivals in trade an opportunity of being preferred by our national customers." So in the woollen manufacture, to choose the most important example, the government fixed standards of length, breadth and weight, forbade processes thought to injure quality, required every piece of goods to bear the mark of the maker, and to be inspected and sealed by a public official before it was sold.

Similar regulations applied to many industries. They were characteristic of the period. They appealed to the power of the state to accomplish what private competition does in a modern society. In English history the important fact is that they soon broke down, and that individual initiative and private competition actually did take control of the development. The seals which were supposed to be a public guarantee of the quality of cloth were sold by the barrel, and were affixed by the clothmaker or by officials under his influence with scarcely a pretence that the regulations were observed.

ATTEMPTS TO ESTABLISH ROYAL MONOPOLIES

Both in the disappearance of the gilds, and in the failure of the government to take their place as a regulator, English in-

dustry had an opportunity for free development that was not matched on the Continent. The student can scarcely appreciate the importance of these factors until he has contrasted the conditions in France. In another respect also England offered a better field for free enterprise, in that the crown failed in attempts to establish monopolies in trade and manufacture.

In England as in Germany there was a tendency after 1500 toward the rise of capitalist monopolies. In the leather trade, for example, in the time of Elizabeth, wealthy members of different guilds struggled for a control of the market, and some half-dozen members of one of the London companies were charged with forming a national monopoly. In the next century a ring got control of goat and kid leather for some twenty years. None was to be had except from three merchants, of whom one was a member of the Leathersellers' Company, while the other two belonged to the Haberdashers but were stationers by trade—a good illustration of the breakdown of the old guilds.

Combinations of this kind appeared time and again in different fields, but conditions were not yet ripe for the establishment of private capitalistic monopolies. The real danger lay in the establishment of monopolies by the government itself. Elizabeth and her Stuart successors were always short of funds. They gave to their favorites and supporters industrial privileges instead of cash, or sold them for cash. The petitioners always alleged, of course, some public benefit to follow the grant, usually the introduction of a new industry or the improvement of an old one. In anticipation of the wages argument for protection Sir Walter Raleigh asserted that before the grant to him of the tin monopoly the "Poor Workmen" never got more than two shillings a week, but after it all could get work at double that wage. The grants took various forms, but usually involved the control of a trade or industry, with power to impose royalties or fines, and to exact fees for exemptions.

OPPOSITION TO THE MONOPOLIES; PATENT ACT OF 1624

By the end of Elizabeth's reign popular feeling against the monopolies was bitter. A speaker in the House of Commons (1601) denounced "the Monopolitans of Starch, Tinn, Fish,

Cloth, Oyl, Vinegar, Salt, and I know not what, nay what not"; "Mr. Hackwell of Lincolns-Inn stood up and asked thus; Is not Bread there? . . . If order be not taken for these bread will be there before the next parliament." England was fortunate in having a national representative body in which the interests of the people could be voiced. According to the English common law grants of monopoly of the kind in question were void, but the power of the crown was so great that it would certainly have imposed them on the country if the popular leaders of the Puritan revolution had not had the opportunity and the boldness to oppose them. The struggle against monopolies continued under Elizabeth's successor, and was formally settled by the statute of 1624, which in general forbade grants of monopoly except "letters patents and grants of privilege for the term of fourteen years or under, hereafter to be made of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor." This act, the foundation of the modern patent system, was followed much later (1774) by a copyright act.

The national government even in the eighteenth century still interfered with the development of manufacture by laws of taxation and regulation which roused the wrath of Adam Smith and which seem now very burdensome, but which were freedom itself compared with conditions on the Continent. Illustration will be provided later from French history.

The towns, acting through the municipal government or the guilds, attempted to maintain their medieval monopolies of trade and manufacture, but were engaged in a losing fight, and in most cases had lost their privileges by the middle of the eighteenth century. A law case of 1724 finally decided that a custom restricting trade in a town to members of the Gild Merchant was bad, that it was a restraint of trade in opposition to the public interest. The craftsmen rebelled against the claim of the guilds to regulate industry, and for the most part won their freedom. Gild restrictions persisted in some places and were one of the reasons why the Industrial Revolution started not in the south but in the north, where freedom and individual enterprise were more general; the coal deposits were of small importance in comparison, at the beginning of the mechanical era.

EARLY CREDIT RELATIONS

Advances in the English organization of production and exchange in this period were reflected in a development of the institutions of credit.

In an earlier period, as has been said above, credit relations existed. They had been mostly personal and incidental. Using Carlyle's term of the nexus, the bonds tying people together, the credit nexus bound pairs of people, but did not spread through the society, uniting many people in one focus, extending from that to other and larger centers of attraction, and binding the whole society in an intricate network. It could not reach this end until the giving and taking of credit had become not merely personal but professional, and until the forms of credit had become so well established and so generally understood that they were accepted as a normal feature of economic activity.

Money lenders existed all over England, merchants and shopkeepers, anyone with surplus capital in town or country. A Norfolk money lender, about 1550, was a party in 30 law suits rising out of usurious dealings. He had organized what would now be termed a racket, with a gang of bullies to intimidate witnesses and opponents, and defied even the public authorities. Hugh Audley was another usurer, "a heartless bloodsucker," who is said to have started in 1605 with £200 and to have been worth £400,000 at his death in 1662. Audley has been denied the title of banker because apparently he did not borrow as well as lend, but doubtless there were many embryo bankers in England, lending other people's money as well as their own. The scriveners, originally notaries and lawyers' helpers, became specialists as brokers of loans, and are said to have paid interest on deposits made with them which would furnish funds for loans.

HOARDING; THE GOLDSMITHS

The ordinary citizen with surplus cash would keep it in the form of a hoard. The wills of the seventeenth century revealed money concealed in shoes, boxes, barrels, behind books or in the joists of the floor. Pepys, the diarist, often recorded anxiety about cash in his possession; Jeremy Bentham, the economist, as a boy found an old hoard in the place where he kept his toys. The

political disorders of the seventeenth century intensified distrust, and London merchants, who had been used to deposit surplus funds for safe keeping in the Tower of London, found that refuge denied them when Charles I in 1640, at the end of his resources, seized the bullion.

In this period the goldsmiths became the favored recipients of surplus money. Their trade required something corresponding to the safe-deposit facilities of the present day; they belonged to a reputable craft, and were thought not likely to abuse a trust. Obviously they were well qualified to receive deposits. Viewing their trade from the other side, they had been used to giving credit, and on occasion lending money. With surprising suddenness they became recognized as professional bankers, paying interest on deposits and lending not only their own funds but those of their depositors. A tract of 1660 termed them "just in the nature of the Bankers at Amsterdam"; in that same year they advanced large sums to the government to be repaid from taxes; two years afterwards Pepys was complaining that a certain goldsmith was making £10,000 a year by discounting pay warrants of the navy; in 1666 Pepys noted that he had got over 6% on some money which he had deposited in Lombard Street, "and hath been a convenience to me as to care and security of my house, and demandable at two days' warning." The first London directory, published in 1677, gave a list at the end of the book of "Goldsmiths that keep running cashes."

EARLY BANKING

The early goldsmiths did a miscellaneous business. The ledgers of the Child family show a mixture of accounts relating to goldsmithing, pawnbroking and real banking. This family counted among its depositors most of the notable people of the time, and before the end of the century had developed a purely banking business, which continued under the family name until 1924.

The early bankers attracted deposits by offering interest, commonly about 6% (4*d.* per £100 per day), but varying with the time and the conditions, giving less for cash on call. In return they issued receipts like the modern certificates of deposit, or their promissory notes in round figures, which soon began to

circulate as money. Transfer of deposits could be made by written order; the earliest check which happens to have been preserved was dated 1675.

Bankers were then, as always, unpopular. Defoe complained that they were "so awkward in lending, so strict, so tedious, so inquisitive, and withal so public in their taking securities, that men who are anything tender won't go to them." Further, they were charged with keeping a minimum cash reserve, and endangering the security of funds entrusted to them. An English economist (Barbon, 1690) complained that people had lost 2 million pounds by accepting goldsmiths' notes, but "the Dispatch and Ease in trade is so great by such Notes" that they still maintained their circulation. There had long been a demand for a public bank to keep the private bankers in order, but the people were afraid that a Stuart king would abuse such an institution, and only after the revolution of 1688 was the Bank of England established (1694).

EARLY FORMS OF BUSINESS ASSOCIATION

The rise of banking made London the focus of a credit nexus which spread in the eighteenth century over all England, attracted the surplus fluid capital of the country and directed it to productive uses. The nature of the banking business, when properly conducted, restricted its operations to short-term loans, which could be quickly liquidated, and made it effective particularly in financing trade. Meanwhile other institutions were in process of development designed to attract capital invested in a fixed form.

The medieval period had developed a great variety of forms of association for carrying on business. Some of these, as was natural, had grown out of the family. Our word company, often applied now to great aggregations of capital, means by derivation a group breaking bread together (Latin *cum-panis*). The great banking firms of Germany about 1500 were of the family type; the house of Rothschild retained this form in the nineteenth century.

The common form of association, extending beyond the family group, was the partnership, in which could be combined individuals of different qualifications and functions, contributing

capital in varying measure. The advantages of such a combination are obvious, and it rendered good service so long as business was on a small scale, and required no great fund of capital permanently invested. It was a personal union, in which each member was bound by the acts of the others, so that he had to know and trust them, and it was dissolved by the death of a partner. The partnership was obviously not fitted for enterprises demanding large amounts of capital in fixed form and needing for success continuity of operation. The field for such enterprises developed in northern Europe after 1500, with the spread of commerce to distant continents, and with the opportunities at home opened by the establishment of the modern state

THE REGULATED COMPANY; THE JOINT STOCK COMPANY

Experiments with a gild form of organization, the regulated company, did not meet the need. In this form, as in the earlier gild, each member carried on business with his own capital and on his own account, merely subscribing a modest amount to a common fund, and promising adherence to rules which were supposed to regulate all activities in the common interest. Merchants trading to a certain region in Europe would organize in this fashion, but the bond uniting them was too loose for effective control, and the common capital was too small to support a military establishment needed to defend their interests.

The institution which developed to meet the needs of the time was the joint stock company with transferable shares. The novelty of this association was its escape from the personal bond which had restricted activities of earlier forms. The person of the participant disappeared, he might die or sell his stock, but the company kept his contribution and lived forever. A system of representative government relieved the stockholder of any active participation in management, but kept for him some supervisory control. While he could not withdraw the capital which he had contributed he could sell his share, maybe, for less but maybe for more than he himself had paid. Obviously the stock company offered to the individual, who desired to share in the gains of an enterprise, an attractive medium of invest-

ment, while to society it furnished enterprises with fixed capital sufficient to take full advantage of expanding opportunities.

EARLY STOCK COMPANIES

The stock company did not appear full-fledged upon the scene, but developed gradually from different origins. The first clear examples in England, both founded in the same year, 1553, were the Russia Company and an Africa Company; one grew out of a regulated company, the other out of a partnership. Other companies followed, and at the turn of the century two great companies, one English, the other Dutch, were chartered to trade to East India.

In some of these early companies traditions of the gild lived on. Shareholders in the London East India Company took an oath of membership and called each other "brother"; a man who bought a share had to pay for his "freedom" an amount varying according to his social class. Some companies reverted from the joint stock to the regulated type. Except in mining and in industrial undertakings, or in such public utilities as waterworks, in which the capital was necessarily fixed, it took long for the idea of a permanently invested fund of capital to establish itself. Shareholders in the East India Company subscribed stock to different voyages, expecting return not only of the profits but also of the subscribed capital at the end of the voyage; the company at one time combined five distinct undertakings, with separate participants. Only in the latter part of the century did the idea disappear that each joint stock was to be wound up; the sale of shares had then become common, and a participant could realize on his holding without impairing the capital of the company. The concept of capital as a surplus fund for the protection of creditors had not yet taken root; companies carried on business without any working capital provided by members, getting it by borrowing or in the case of banks (even the Bank of England) from depositors.

FAULTS OF EARLY COMPANIES

The problem of the time was to develop an institution which would make the urge to gain not merely individual and purely egoistic, but collective, embracing many people from different

orders of society. Individual selfishness could not be made to disappear, but it must be tempered and restrained by a recognition of the larger interest of the group. The larger and more heterogeneous the group the more difficult was the task.

Before forms of law had been devised to check abuses, and before social standards of honesty and loyalty had become established, it is not surprising that many faults appeared in the new form of organization. Methods of accounting were still so primitive that it was difficult at best to determine the rights of different parties. The management kept the accounts secret so far as possible, sometimes to avoid criticism, sometimes to prevent discovery that they had been falsified. Stockholders who received good dividends were not likely to make trouble, so these were paid if necessary out of capital or from borrowed money. Those inside the management made contracts with themselves at the expense of the company, and in other ways abused their trust. The Russia Company borrowed money, then wound up the old stock, forming two new companies; creditors of the parent company were denied payment by all three. The term "soulless corporation" has the dignity of age; a critic asserted before 1700 "companies have bodies, but it is said they have no souls; if no souls, no consciences."

GROWTH IN IMPORTANCE OF THE STOCK COMPANY

In spite of all faults the joint stock company met the needs of the time, and established itself as an essential part of the economic system. Its spread into prominence in different fields has been blocked out as follows: 1560-1660, maritime enterprise, colonization (e.g., Virginia, Massachusetts); 1660-90, foreign trade; 1690-1720, organization of credit.

A striking (though, as will appear, a grossly exaggerated) index of its growth in importance is furnished by the following estimates of the nominal assets of English stock companies compared, in percentages, with the total national wealth.

	<i>Total</i>	<i>Percentage</i>
1560	£ 10,000	0.013
1695	4,250,000	1.3
1720	50,000,000	13

The figures of the two later dates illustrate not the actual position of companies in the economic life of the time, but the position which promoters of stock enterprises wanted the public to believe that they held. The dates mark the beginning of the great speculative movements on the London stock exchange.

THE STOCK EXCHANGE; SPECULATION AND CRISES

Since the time of Elizabeth the business men of London had been used to meet in the Royal Exchange, a building in which different "walks" were frequented by the specialists of each trade or industry. As stock companies grew in number and importance brokers appeared, who took their place in the center of the building, offering a market for shares. In the half-century preceding 1700 there had been a marked quickening in English economic activity, of which the rise of banking was an index; commerce and industry were in process of rapid development, the national income and the surplus available for investment kept pace. The prices of stocks, now recorded as a matter of general public interest, rose recklessly. Following are the quotations of some important companies about 1692, with figures in parenthesis giving prices after the collapse of the boom in 1697: East India Company 200 (37), African Company 52 (13), Hudson Bay Company 260 (80), Linen Corporation 45 (5). Promoters, projectors as they were called, were active in floating new enterprises to meet the public demand. In a few years the number of joint stock companies rose from about a score to over a hundred, of which the smaller part survived the crash of 1697.

There is not space in this book to describe the later development of credit and investment institutions. Writers of the time denounced, of course, the gambling in stocks which had led to such sorry results; an act of Parliament put stock brokers under severe restrictions, and they were expelled from the Royal Exchange. Another great speculative movement, connected with the operations of the South Sea Company and marked again by the floating of new companies, "bubbles," led to another and more severe crisis in 1720, and another series of restrictive laws. Try as it might the government could not suppress and could hardly regulate the dealings in stocks.

Obviously society took a serious risk when it allowed claims to wealth to escape the personal bond, to be represented by mere pieces of paper, bank notes or stock certificates, passing freely from hand to hand with scarcely a thought of the actual material wealth on which they were based. For better or worse the credit and investment institutions became an integral part of a capitalist society, which still struggles to control them, but which without them would dissolve into something far different from its present form.

QUESTIONS

Explain the advantages of England in political development. Block out the political history.

Illustrate English vagabondage after 1500, and the reasons.

Explain the advantages of pastoral over arable agriculture, and the relation to enclosure.

How and why did the concept of property in land change?

What was a copyholder?

What were the failings of the craftsman under the new conditions?

Analyze the advantages of the merchant employer.

Illustrate the decline of the gilds.

What were the aim, main features and results of the Elizabethan Act of Apprentices?

Illustrate the minute regulation of manufacture, and state results.

Illustrate the tendency to monopolies, private and public.

What was the significance of the patent act of 1624?

Illustrate early credit relations.

Explain the rise of goldsmith bankers.

Illustrate the nature of their business.

What were the early forms of business association?

What was a regulated company? What superior advantages were offered by the joint stock company?

Illustrate the characteristics of early stock companies.

What were characteristic faults?

Illustrate their growth.

Sketch the early history of the stock exchange, speculation, crises.

READING

Outside of the manuals the best single source for reading to supplement the topics of this chapter is E. Lipson, *Economic History of England*; references are given to the revised edition, London, 1934. Heaton offers abundant bibliographies on special topics.

Industry and commerce, 1500-1750. (Heaton, chap. 14, pp. 302-333.)

Structure of rural society. (Lipson, vol. 2, chap. 3, sec. 1, pp. 372-395)

- System of agriculture. (Lipson, vol. 2, chap. 3, sec. 2, pp. 395-419.)
- Early woolen industry. (Lipson, vol. 1, chap. 9, pp. 440-510.)
- Industrial organization. (Heaton, chap. 15, part 1, pp. 335-352.)
- Development of woolen industries. (Lipson, vol. 2, chap. 1, sec. 1, pp. 10-93.)
- Other industries. (Lipson, vol. 2, chap. 1, pp. 93-183; Textiles, sec. 2-5; Coal, sec. 6; Iron, sec. 7.)
- Regulation of wages and apprenticeship. (Lipson, vol. 3, chap. 6, sec. 2, 3, pp. 248-294.)
- Regulation of industrial standards. (Lipson, vol. 3, chap. 5, sec. 5, pp. 319-330.)
- Craft guilds. (Lipson, vol. 3, chap. 5, sec. 6, pp. 330-352.)
- Patents of monopoly. (Lipson, vol. 3, chap. 5, sec. 7, pp. 352-386.)
- Capital and finance. (Clough and Cole, chap. 6, pp. 173-194; Lipson, vol. 3, sec. 1, pp. 208-248.)
- Credit institutions. (Clough and Cole, chap. 9, pp. 274-317; Heaton, chap. 15, part 2, pp. 352-381.)

CHAPTER VII

England in the Eighteenth Century

OCCUPATIONS ABOUT 1700

Shortly before 1700 an intelligent and well-informed Englishman, Gregory King, made an estimate of the distribution of the people in different occupations, and of their earnings in each. Recasting his figures, to make possible a comparison with the statistics of a modern census, we get for the more important branches of occupation the following results, stated in percentages of the total number employed or receiving an income:

<i>Countries</i>	<i>Agriculture</i>	<i>Manufacturing and Mining</i>	<i>Trade and Transport</i>
England, 1696	77	5	8
England (and Wales), 1931	6	46	27
United States, 1930	22	31	21
Bulgaria, 1926	81	10	4
Poland, 1921	76	11	6

Making full allowance for inaccuracy in the figures thus compared, we find the general picture which they present confirmed by other evidence. The economic organization of England in 1700 was much more like that of the Middle Ages than that of the present day. It was in a stage of development comparable to that of a contemporary people in eastern Europe or in the Balkan peninsula. Three workers out of four were still engaged in the primary occupation of wresting a food supply from the soil.

A people living in that fashion, particularly when internal and foreign trade are undeveloped, must lead a simple life. It is impossible to give a single statistical measure by which the standard of living then and later can be compared. Gregory King, it is true, gives estimates not only of the number of people but also of the total national income about 1700, which would make the average income per family in England then about £33, say \$165, and the income per capita, say \$40 a head. But these figures,

stated with such appearance of precision, may be based on estimates far from the facts, and do not tell us, at best, how much the money of that time would buy. Taking one commodity, for example, the price of wheat varied in different places and different years from 3 to 6 shillings (\$0.75 to \$1.50) a bushel, and we do not even know just how important wheat was in the people's diet, for many ate "horse-corn," oats, peas, beans, barley, and the like. This much is certain, that the cost of living did not differ so much from the present that we need to make a great allowance; and that when all allowances are made, the standard of living then would seem to many moderns impossibly low.

DISTRIBUTION OF INCOME

Gregory King gives figures which enable us to calculate the distribution of the national income among different classes of society. The figures are, of course, based on guesswork, and must not be taken too seriously, but they are at least approximations to reality and supply the most careful estimates which we have on this important subject. They are presented below, in round numbers, with recent American figures for comparison.

<i>Group</i>	<i>England, 1696</i>		<i>United States, 1918</i>	
	<i>Per Cent of Population</i>	<i>Per Cent of Income</i>	<i>Per Cent of Population</i>	<i>Per Cent of Income</i>
I	1*	14	1*	15
II	5	17	5	13
III	32	47	33	38
IV	62	22	61	34

CLASSES

The groups distinguished in the table according to their share in the national income correspond pretty closely to the accepted class divisions of the time. At the top, Group I, comprising 1 to 2% of the families in the country, were the nobility and gentry, starting with peers of the realm, both temporal lords and bishops, and running down through baronets and knights to esquires and simple gentlemen. The family income of the ordinary gentleman was set at £280. The distinguishing characteristic of this class was still, as it had been when Sir Thomas Smith described the English

constitution in the sixteenth century, that members of it were able to "live idly and without manuall labour."

Groups II and III together composed the middle class. In its upper level this included merchants, of whom many had incomes exceeding those of the gentry but had no such social standing, also the upper ranks of government officials, and representatives of the professions, particularly clergymen and lawyers. Members of this class did not "live idly" but did live "without manuall labour."

Group III, the lower middle class, was much larger. It included mainly small landholders and farmers, with family incomes corresponding roughly to those of the clergymen in the group above (say about £50), but insufficient to enable them to live as gentlemen. Men in this class would have laborers to help in the work but would share in the work with them. Less numerous in this group were the representatives of trade and industry: shopkeepers and petty tradesmen, artisans, and handicraftsmen, with incomes about £40.

The fourth group, by far the most numerous, nearer two-thirds than half of the population, included some soldiers and common seamen; but was made up for the most part of manual laborers working in agriculture. King distinguished two classes among these last: the regular agricultural laborers to whom he ascribed an average *family* income of £15 a year, and below them the "Cottagers and Paupers" with a family income less than half that (£6/10s.). And these "Cottagers and Paupers," with the dependents in their families, formed almost one-quarter of the total population (1,300,000 out of 5,500,000)! The reader might well ask how a family could manage to survive on an income of some \$35 or even \$75 a year, and King's answer would be that it did not. He estimated that the living expenses of all the people in this last group, comprising more than half of the population, exceeded their regular income and that they lived in part at the expense of other classes, receiving poor relief or picking up a supplement in other ways. He estimated that a supplement of 4s. (\$1) a head, on the average, enabled them to get along.

It will be necessary to return to some of the subjects touched on above, to fill in the details of the picture, but two comments of a general nature may be made here. In the first place, "capitalism"

as we know it now was not responsible for the structure of society sketched above, but rather was destined to dissolve and recast it. In the second place, England was better off than other countries with which we shall have occasion to compare it. David Hume, a shrewd observer, writing when conditions were worse than at this time, congratulated the English on their unparalleled combination of a large national income and a relatively equal distribution of it. "In this circumstance consists the great advantages of ENGLAND above any nation at present in the world, or that appears in the records of any story."

AGRICULTURE

As shown in the statistics of occupations at the beginning of the chapter agriculture still overshadowed in importance any and all other branches of production. A direct conclusion from the figures that agriculture alone occupied nearly 6 times as many people as were engaged in manufacture and in mining, in transportation and in trade, all taken together, would exaggerate the conditions, since many of the agriculturists were themselves industrial producers in a small way. Yet the reader will fail to appreciate the rapidity of the transformation in the last two centuries if he does not realize, even with any reasonable discount of the figures, how far England still was from contemporary conditions, how near it still was to the medieval. Agricultural land was by far the largest item in a census of national wealth; capital investments in means of transportation and of manufacture were of almost negligible importance. Even as regards commerce it is significant that a good economist, writing shortly before King, estimated the value of live stock on the land as exceeding that of all the shipping plus the sum of wares and merchandise.

While the ruling class owned a large part of the land, and so were enabled to live a life of leisure, they had no such monopoly of ownership as they were later to attain. Far exceeding them in number was a class of small landholders, who had practically full property right in their land, and hence were termed freeholders. A writer of the time thought that the freeholders of England were more extensive and were better off than those of any other country of Europe.

Agriculture was still by far the most important branch of liveli-

hood, giving employment to three out of four of the working population. The agriculture of the time, about 1700, was still much nearer to the medieval model than to the agriculture of 1800. A considerable part of the plowland, perhaps a third to a half, still lay in open fields, and hence subject to centuries-old systems of cropping and fallow. On enclosed land cultivation was much more efficient. The owner, free from burdensome restrictions, could choose his crop, and could cultivate, drain and manure to better advantage. Root crops, such as turnips and carrots, and so-called artificial grasses, such as clover and saint-foin, were already known, but the great extension in their use, along with that of the potato, came only in the latter part of the century. The later development will be described in the next chapter.

ECONOMIC ORGANIZATION; TRANSPORTATION

Most of the people lived in villages secluded from the outer world, with most of their interests limited to the immediate neighborhood. Transportation, by which regions could be bound together, was still medieval in character. The author of *Pilgrim's Progress* is supposed to have drawn his picture of the Slough of Despond from the roads about London. Some roads were actually worse than they had been in the Middle Ages. They had been worn down by use until they were far below the level of the land, a condition reminding one of contemporary China, and suggesting what sloughs they must have been in a wet season. Some of the roads near Birmingham were worn so deep that a hay cart could pass in them without being seen. Defoe told of seeing wagons drawn by ten or twelve horses apiece, so great a number being needed to drag them. So bad were the roads that preference was given to transportation by pack animals, which were strung out like a caravan, following the bell of the leader in single file, and able to take to the side when the road became impassable. Under these conditions the charge for transporting freight was necessarily heavy. A rate of one shilling per ton-mile (to be compared with one cent a ton-mile on a modern American railroad) is instanced as typical. Obviously the movement of freight, under these conditions, would be restricted to the most necessary and most valuable wares. It follows that most goods

were produced near the place where they were consumed. As the extent of the market was thus limited, there could be little specialization. We lack, of course, precise figures on which to base an account of the organization, but it is important to have an idea, even if it is inaccurate in detail, of the way a society of this sort would satisfy its economic needs. An attempt is made below, therefore, to sketch in outline a rough scheme of the organization of the period.

THE VILLAGE

The village, of a few hundred inhabitants, was the important unit. It must be thought of as a block only two or three miles square, shut off for the most part from the outside world. Most of the food consumed was produced within sight of the village church. Tea, sugar, and tobacco made their way into the country districts in the eighteenth century, but the ordinary villager could spare little for such luxuries. He would have his grain ground by the village miller, and his wife would seek the service of the local baker, for the simple villager could not afford to build and fire an oven merely for his own family. His cottage would be built of local material by local artisans. He would have to import glass if he could afford it, but he would get from the local blacksmith most of the ironwork he needed for house and implements.

THE TOWN

A larger block, say ten miles square and including some fifty villages, more or less, would have at its center a town, counting a few thousand instead of a few hundred inhabitants. Each town would have its regular market day, when the country people would come to do their trading, and would satisfy needs which the village workman could not meet. They would get leather tanned and curried, and would get their harness of the saddler; they might get their shoes made in the town or in the village, for the cobbler's trade was widespread. They would get casks and barrels of the cooper, possibly some furniture from the turner and cabinetmaker, metal ware from the brazier and tinman. They would get here the cloth for dresses and clothes, and a few other things which had not been made in the town but had been manufactured in some place more or less distant. To pay for

these things they would bring with them the surplus of their simple agriculture, and such products as they could make in their spare time: baskets, brooms, wickerware, and the like. The towns included some trades which served the townspeople and the people of quality in the surrounding country: tailors and dressmakers, pastry cooks and brewers. For the finer products of these artisans the village folk made little demand.

There were, of course, larger towns with more specialized trades, and on the waterways there were cities such as London and Bristol with a commerce sufficient to support a large population. In contrast to most of the large English towns of the present day these places were populated mainly by middlemen; they lived by trade, not by manufacture. In no respect was England so different then from the present as in the subordinate position of manufacture, and the way in which manufacture was dispersed through the country instead of being concentrated in factories and factory towns. These two points need to be illustrated in some detail.

MANUFACTURE

Reference to the table at the beginning of the chapter will show that manufacture was estimated about 1700 to occupy less than one-twentieth of the people, a proportion smaller than is shown by a country of the present day in southeastern Europe. It is fair to recognize that the English figures included only those persons who gave all their time to manufacture, and did not count the great amount of work done by the agricultural population in their spare time. Yet when their work was included, and the importance of manufacture was judged by the total value added to the materials on which it worked, it fell far below agriculture. Even about 1770, when the Industrial Revolution was just beginning, a good judge set the value contributed by agriculture at more than three-fold that contributed by specialized manufacture, at much more than double the industrial contribution even when the work of petty craftsmen and shopkeepers was included. The woollen industry was, as it had long been, the leading branch, not only providing the population at home with clothing materials, but making also a considerable surplus for export. Next in order of importance came the metals, then manufactures of leather,

while the remaining branches (silk, cotton, flax, hemp, glass, paper, porcelain) did not, all together, reach in importance any one of the three leading branches.

STAGES OF INDUSTRY

It is convenient to distinguish four stages of organization in the development of manufacture: household, handicraft, merchant employer, factory. England, even in 1700, could furnish examples of all four, although the last and most highly developed, the factory system, became dominant only after the Industrial Revolution. The simplest form, that in which goods are made in the household by members of the family, was still widespread. It persists still, of course, in such activities as cooking and sewing, which are properly manufacturing operations. In an earlier period, when incomes were small and opportunities to trade were restricted, people had in most cases to make things themselves, or go without. The reader can readily imagine what would be his choice if that alternative were put before him and he were faced by the difficulty of exercising a dozen different trades, with clumsy homemade tools. As has been seen, the rise of towns in the Middle Ages established a professional class of handicraftsmen to supply the demand for the commoner industrial products. Great as was this advance it still left society dependent for manufactured wares on producers working in a very small way, bound by tradition, and necessarily charging a high price for their products. The limitations of handicraft offered the opportunity for vigorous spirits to enter and organize the trades. Merchant employers took control of manufacture, which thus entered on its third stage.

CHARACTERISTICS OF MERCHANT EMPLOYER SYSTEM

In contrast to the factory system the merchant employer system was marked by the dispersion of the workers. They were not gathered in one building, not even in one town; the people working for one employer would be scattered at considerable distances through town and countryside. The employer would have agents making their rounds, giving out raw material and gathering the finished product, which was brought to the merchant's ware-

house to be distributed in the trade. Obviously the employer had little control over the action of the workers. He found it hard to check and improve the quality of their work. He could not count on the quantity. He suffered constantly from embezzlement of his raw material. A special group, "endgatherers," grew up to trade in stolen wool; and so far did the evil extend that the old idea that an Englishman's house was his castle was abandoned to allow employers to search the cottages of their workers for stolen material.

The workers had their troubles also. If they seem better off than modern factory hands in that they did their work at home, when and how they pleased, the reader must not suppose that they led such an idyllic existence as is sometimes pictured. A pitifully low wage made the system possible, from the employer's standpoint, but required long hours of work, and frequently work by all in the family, if existence was to be maintained. The laborers were often obliged to take payment in kind, "truck," instead of money. They were not sure of steady work; the employer had low overhead costs as he had no factory or machinery to maintain, and simply stopped operations in dull times.

CONDITION OF LABOR

In a period nearer our own times, when an interest in the working classes had sprung up which was entirely new, and the evils attending the factory system were recognized, it was supposed that these evils also were new, that they were the result of machinery, and that the period preceding the Industrial Revolution was a sort of golden age for the industrial worker. Pleasant pictures were drawn of the home life in which a man could work when and how he pleased, with his family about him, and of the village life when the women and children on a bright day would bring their spinning wheels to some favorite spot outdoors where they could spin and gossip together. The subject appealed to writers of literature rather than to students of history, and a description of it, almost altogether fanciful, was accepted as correct.

Actually, the industrial worker of this period was desperately poor. The one respect in which he appears better off than the factory laborer, his independence to work where, when, and how he pleased, was of little value if, as was often the case, he had to

work all the time as best he could with the help of the whole family to make a bare living. If the worker had a little land of his own, could keep some fowls and a pig or maybe a cow, and had rights of common in the village, he would be tolerably well off. The very fact, however, that many did combine agriculture and industry made them willing to accept a lower return for their industrial labor, and reduced wages to a pitifully low level for those dependent entirely on them.

Macaulay quoted from a broadside in the British Museum some verse which shows the feeling of the woolen workers toward the master clothiers, their employers. The master clothiers are supposed to be speaking.

In former ages we used to give
So that our workfolks like farmers did live;
But the times are changed, we will make them know.

.

We will make them to work hard for sixpence a day,
Though a shilling they deserve if they had their just pay;
If at all they murmur and say 'tis too small
We bid them choose whether they'll work at all.
And thus we do gain all our wealth and estate,
By many poor men that work early and late.
Then hey for the clothing trade!*

HOURS

The low wages, which made the system possible from the employer's standpoint, required laborers to work inordinately long hours to make a living. Adam Smith said: "A shepherd has much leisure, a husbandman some, a manufacturer [the current term for an industrial worker] none at all." Weavers in the seventeenth century worked from 4 A.M. to 8, 9, or 10 P.M. for 7 to 10s.

* As an example from the eighteenth century may be quoted "The File Hower's Lamentation," by William Mather, living 1737-1804, and brought up to the trade of making files.

As negroes in Virginia
In Maryland or Guinea
Like them I must continue
To be both bought and sold.
While negro ships are filling
I ne'er can save one shilling,
And must—which is more killing—
A pauper die when old.

—LLOYD, *The Cutlery Trades*, 1913, p. 166.

a week. Nailers are said (1713) to have worked from 4 A.M. Monday to late on Saturday for 3s. The hours of weavers in the eighteenth century are described as 14, sometimes 15 or 16, including meals. Gloucestershire weavers complained that they got only 4d. for 16 hours' work.

Economic pressure forced parents to set the children at work at the earliest possible age. A man of the period said he would not choose to live again if he would have to endure a second childhood; those were the "days of infant slavery," "the creatures were set to work as soon as they could crawl." Daniel Defoe was told in Taunton, "That there was not a Child in the Town, or in the Villages round it, of above five Years old, but, if it was not neglected by its Parents and untaught, could earn its own Bread"; likewise in Yorkshire, "scarce any Thing above four Years old but its Hands are sufficient for its own Support." The very old had to share the family task alongside the very young. A characteristic evil of the system was the payment of wages in truck instead of cash. Even in the sixteenth century a statute forbade the master clothiers to force the people they employed to take pins, girdles, and other "unprofitable wares" instead of money; "the clothiers shall pay ready money to their work people." Truck payment remained an evil throughout the period.

HOUSING, FOOD

Finally, as regards the workplace, we must realize that a factory of the present day would seem a palace to the people of this period, and that even the earlier factories offered improved conditions to many of them. The word "cottage" now suggests comfort, maybe embellished with roses. In the seventeenth and eighteenth centuries it means commonly what we should now term a hovel, a single room with a dirt floor and a loft above, dark and damp. It must have been intolerably dreary, especially in the short days of winter, when work had to be carried on by the light of the expensive and ineffective candle, and the scarcity of fuel forbade heating.

Regarding the food of the working classes we may refer again to Gregory King. He estimated that less than half of the population ate meat regularly. Over one-quarter were "lamilies, who, by reason of their poverty, do not contribute to church or poor,

and consequently eat not flesh above 2 days in 7"; the remainder, not much less than a quarter of the whole, were "families who receive alms, and consequently eat not flesh above once a week." Conditions varied from trade to trade, and from time to time. Norwich weavers, in the later eighteenth century, dressed like the gentry and made a point of having roast goose for Sunday dinner; the next generation of them was in abject want. Sheffield cutlers in the eighteenth century rarely saw roast meat, the most they could hope for was to "boil the pot" once a week. The cutler had a shop and living room with a dirt floor; behind it was a lean-to smithy, and from it a ladder led to the chamber above, open to the slates; only the better class had glass windows instead of oiled paper.

SOCIAL CLASSES

The case of the Norwich weavers, who imitated the gentry, has a significance which deserves to be explained and emphasized. England had still at this time marked class distinctions, and indeed, as will appear, they persisted into much later times. The separation of classes was, however, not nearly so sharp as it had been, or as it long continued to be in other countries of Europe. Costume was still a pretty good indication of class, and the imitation of the costume of a superior class was an indication of social ambition which was distinctly modern. A writer of about 1700 (Bernard Mandeville, whose *Fable of the Bees: or private vices publick benefits* roused a great stir) found this social emulation in many classes. The wife of the poorest laborer half starved the family to get a second-hand gown and petticoat because they were more genteel; the weaver, shoemaker, tailor, barber, "and every mean working fellow" had the impudence to dress like a tradesman of substance if he could. The system of classes based on birth and the hereditary transmission of a definite place in society was breaking down.

Even in the sixteenth century Smith complained, "As for gentlemen, they be made good cheape in England"; a man needed only to have the money to support the position, then "he shall be called master, for that is the title which men give to esquires and other gentlemen, and shall be taken for a gentleman." A writer on economics toward 1700 thought that manufacture was injured

by the fact "that the Passages to other Preferments are made so open and easie." He complained of free schools "where every ordinary Man's Son is taught Latin, Greek, and Hebrew for a small matter; and then is above Manufacture." He denounced the scholarships at the universities as tempting parents to send children to follow "a sort of *Gentleman-like* ways of living which entitle them to be called *Masters*." It was still difficult and very exceptional for a man to get out of the lower laboring class; he might imitate his betters but could hardly hope to get a place among them. English history from 1650 on is full, however, of examples of men rising from the middle class to the gentry and even the peerage. Defoe, who knew England well, cites examples of great country houses built with money made by a merchant, a brewer, a linen draper, a stock jobber.

The old law had required a man to assume the duties of a knight if he had an estate in land of a certain size. The new practice encouraged a man to aspire to the privileges of rank if he had accumulated sufficient property to support the position. The requisite amount grew with the general increase of wealth. When Smith wrote, a man would not hope to be made a peer unless he had an annual income approaching £1,000. In the time of Mandeville, "if a Peer has not above Three or Four Thousand a Year, his Lordship is counted Poor." When Pitt declared, toward 1800, that every man with an estate of £10,000 a year had a right to a peerage he sounded, in Disraeli's opinion, the knell of a true aristocracy.

THE RULING CLASS

It is not easy to appraise the ruling class of England in this period, "that blind, selfish, indomitable aristocracy of county families, which made the British Empire and ruined a considerable proportion of the English nation." The author last quoted, R. H. Tawney, must be allowed to continue his sketch. "From the galleries of their great mansions and the walls of their old inns their calm, proud faces, set off with an occasional drunkard, stare down on us with the unshakable assurance of men who are untroubled by regrets or perplexities, men who have deserved well of their order and their descendants, and await with confidence an eternity where preserves will be closer, family settle-

ments stricter, dependents more respectful, cards more reliable, than in this imperfect world they well can be."

The private vices and public faults of this ruling class are well known to every student of English history, and will be illustrated only in some particular respects in this book. What merits, if any, did they have?

One merit must be ascribed not to them as individuals, but to the system by which they had attained their position. Sordid and ignoble as might be the motive of men below them to struggle to attain their rank, by wealth to reach power, this motive worked with almost explosive force. Regarded merely as bait to men's senses, the life of luxury and self-indulgence stimulated to exertion men who were too coarse to be moved by higher thoughts. The very spread between classes, so long as the gulf between them was not impassable, inspired bold men to try to work upward. These men, by their movement, broke the cohesion of old custom, and prepared society for the economic revolution of the following period.

One distinct merit, further, must be ascribed to the upper class as rulers. If they sought primarily their own selfish interests, they recognized that they were bound up with the interests of the country as a whole. They might spend their personal incomes extravagantly, but they realized that these incomes came from the labor of classes below them, and they guarded jealously the resources from which the national income flowed. They followed carefully the course of commerce, and listened with attention to merchants who could tell them how and where England might gain. They often engaged the country in war, but at least they had much less respect for military glory than for the solid material advantages to be secured when peace was made.

When the reader has followed the course of development in other countries, he will realize that even these slight merits were of inestimable value to England. If he seeks something beyond them, and inquires what positive contributions the ruling class made to the civilization of the country and the elevation of the people, he will find little. The expenditures of the central government were devoted almost entirely to the army and navy, the court, and an administration which was treated as a source of income by the rulers. To such services as education or care

of the public health the government paid practically no attention. The burden of taxation was inevitably heavy in a period of frequent wars, and bore with especial weight on the lower classes. They were too poor to pay anything directly to the treasury but were reached by a system of indirect taxes which raised the price of the articles which they consumed. The condition may be illustrated by an estimate of 1756, applying to the indirect taxes on an agricultural laborer whose wages were assumed to be 5s. a week, or £13, say \$65, for the year.

A tax of 6% on the income, such as is represented by the following figures, is easily borne by a man in comfortable circumstances, but is a very different thing to a person on the verge of destitution. Actually, it was a common assumption by the economists of the period that the laboring class could bear no taxes at all; they were supposed to be on the very margin of subsistence, so that a tax levied on them must be shifted to others if they were to live.

<i>Articles</i>	<i>£</i>	<i>s.</i>	<i>d</i>
Beer		4	7
Salt		3	4
Sugar, etc.		2	0
Leather		2	2
Soap and candles		1	3
Drugs, tobacco, etc. . . .		2	6
Total		15	10

QUESTIONS

What was the relative importance of agriculture and of manufacture in England about 1700? What contemporary countries show a similar organization? How does it compare with the organization in later England and U. S.?

What is the estimate of average income per family or per capita? Compare with the following estimates of prewar (1914) average per capita income: U. S., \$335; United Kingdom, \$243; France, \$185; Germany, \$146; Italy, \$112; Spain, \$54; Japan, \$29.

How was the income distributed among classes? How does this distribution compare with that in the U. S.?

What were the economic and social characteristics of the different income classes?

How did England compare with other countries, as regards amount and distribution of income?

What were the most important forms of national wealth?

How did means of transportation affect the organization?

What needs were supplied in the village?

What needs were supplied by the town?

What were two important points of contrast in manufacture then and now?

Distinguish four stages of industrial development.

What were the characteristics of handicraft, and the condition under which it survived?

In what respects was the merchant superior?

What were characteristics of manufacture under a merchant employer? What were its faults?

What were the conditions of labor, as regards hours, pay, child labor?

What were conditions as regards housing and food?

What indications were there of a change in social classes?

What were the advantages of the social-political system?

What were its faults?

Illustrate the income and taxes of an agricultural laborer.

READING

The little book which best supplements the subject of the present chapter is M. Dorothy George, *England in Transition* (London, 1931). Of use also for the present chapter, but of particular importance for the chapters following, is Gilbert Slater, *The Making of Modern England*, American revised edition (Boston, 1915); this edition contains a notably full bibliographical appendix, xix-xli. Excellent reading in addition will be found in other books by Mrs. George, and the books of J. L. and Barbara Hammond.

Conditions and classes about 1700. (George, chap. 1, pp. 1-30.)

Agriculture and industry about 1700 (Slater, Introduction, Part I, pp. xiii-xxix.)

The village and enclosure. (George, chap. 5, pp. 106-141; Slater, chap. 2, pp. 21-48.)

The earlier industrial organization. (George, chap. 3, pp. 54-86.)

The English silk industry in the eighteenth century. (G. B. Hertz in *English Historical Review*, 1909, 24:710-727.)

Child labor. (George, chap. 7, pp. 166-191.)

Reforms in the eighteenth century. (George, chap. 4, pp. 87-105.)

The Wedgewoods: ten generations of potters. (Hower in *Journal of Economic and Business History*, 1932, vol. 4, pp. 281-313, to 1795; pp. 665-690, to 1920.)

Housing of the rural population. (Fussell and Goodman, in *Economic History*, Jan., 1930, 2:63-90.)

CHAPTER VIII

The Industrial Revolution in England

POLITICAL BACKGROUND OF THE INDUSTRIAL REVOLUTION

The year 1688, shortly before the date of Gregory King's figures, was a momentous one in the history of England and of Europe. It was the date of the "Glorious Revolution," which marked the end of absolutism and the beginning of parliamentary government in England. It was the beginning of a century-long strife between England and France, in which France wrecked its opportunities by fruitless struggle to dominate the continent of Europe, while England laid the foundations of its empire across the seas. These are, of course, matters of politics, not of economics, but an attempt will be made in this and following chapters to show that the economic development then as always was conditioned by political factors, that the English Industrial Revolution of the eighteenth century depended upon the political revolutions of the seventeenth.

In economic matters the English were still behind the leaders. They envied the Dutch their abundant capital, their credit institutions, their low rate of interest. They envied the French their manufactures and commerce. They envied even the Germans their superiority in the mining industry. England was still struggling for a place.

Little more than a century later all was changed. The latent germs of development had burst into full growth. England had risen to a new stage of economic organization, it had passed through an Industrial Revolution. In this respect it stood alone. Through a large part of the nineteenth century it was, in economic matters, the leader and the teacher of other countries in the world.

The course of the Industrial Revolution is sketched usually

about as follows. It started in the cotton industry, in the manufacture of yarn. Some ingenious persons realized the inefficiency of the old spinning wheel, by which one worker made only one strand of yarn at a time, and invented machines in which there was a considerable number of spindles, all tended by one worker. To run these machines some power besides that furnished by the worker was desirable, if not necessary, so water wheels and shortly afterwards steam engines were applied, and the workers were grouped in factory buildings. The output, multiplied many-fold, could now be produced at lower cost, sold at lower prices, and distributed in a much broader market. The new procedure, introduced in the spinning of cotton, spread to other processes, such as weaving, and to other branches of textiles and was adopted by other industries. The result was a tremendous increase in efficiency, expansion of trade, and accumulation of wealth.

COMPETITION

These are all accepted facts, and all are important; they will be described in greater detail in following pages. They are still only the external marks of the development. Less obvious but not less important were changes in men's ideas and men's activities without which the revolution would have been impossible. One author has summed the matter up in the following sentence: "The essence of the Industrial Revolution is the substitution of competition for the mediaeval regulations which had previously controlled the production and distribution of wealth."

What is competition? The word is constantly on our lips and yet it is not one easy to define. In the quotation above it is opposed to custom, the habits persisting in the craftsman since the time of the guilds. Another element involved in the word is that of struggle, an effort to do something better than somebody else. It suggests a certain amount of personal freedom. Laws there must be, in every civilized society, but in a competitive society these laws are reduced to a minimum. They do not tell a man what he must do; they refrain, even, so far as possible, from telling a man what he may not do. They aim to let a man do what he chooses, but force him to take the consequences. They set simple rules for a race in which the winner is spurred on by the hope of a great prize, and the losers by the fear that the devil

will take the hindmost. The evils of the system are known to all of us. Those evils appear in a shocking form, in the early days of the system; illustrations of them will be given later. On the other side, the system showed, even in its early days, that capacity to unloose human energy to which religion alone furnishes a parallel. The Industrial Revolution took place in England, not elsewhere, in the eighteenth century, not earlier or later, because in England then alone of all countries, conditions were ripe for the rise of the modern competitive system. The two things went together. Nothing less than the tremendous force unloosed, one may say created, by competition, would have availed to impose the new industrial order on a reluctant or hostile world.

EARLY INVENTIONS

The complexity of the development can be best illustrated by tracing the history of invention in England. The English had not demonstrated, before the eighteenth century, that capacity for invention which a later English economist (Jevons) was to claim for them. The best that a careful student of the subject can say for them is that the mechanical inventions patented "represent a fair state of mechanical activity, some ingenuity, and considerable teachableness." Both Germans and French were regarded as distinctly superior in technical ability. The one important English invention of the period was that of the stocking frame, due, it is said, to the desire of the inventor to have the undivided attention of the young lady he was courting, without the distraction of her constant knitting. The stocking frame, invented in 1589, did not get established in England, was taken over to France, and only later was brought back to the country of its origin.

FOREIGN IDEAS

If England in this period was not inventive, the country was at least getting ready to take advantage of invention. It imported many good industrial ideas, in the fashion of the time, by importing the men who had them. While the Continent suffered from religious persecutions and from the ravages of wars of religion, England offered a place of security, and a fair amount of religious

toleration. The Huguenots, driven out from France in 1685 by the revocation of the Edict of Nantes, were the most striking but not the only example of alien immigrants who paid richly for the refuge furnished them. Some 80,000 Huguenots landed, of whom about half remained. The number seems small, less than one per cent of the population, but these were picked people, and acted like a ferment in the mass. Of the immigrants of the seventeenth century it was said, "There was not a beggar among them." "Honest as a Huguenot" was a proverb; a drop of Huguenot blood in the veins was worth thousands of pounds sterling, said Huxley later.

English manufacturing industry through this period was developing to a large extent in the hands of foreign workmen. The old woolen industry was improved by them and brought to make finer cloth, the "new drapery." The finishing trades, by which cloth was dressed and dyed, were brought in from Holland. The silk manufacture was never firmly established until the French refugees came in. According to a story of the time, the French learned that a refugee was teaching the English Lustring Company the difficult art of giving luster to the finished silk. They could not get him back to France, as he was a Protestant, but tempted him to Switzerland; "when they had him there, he was soon put out of the Way, and never heard of afterwards." The English probably owed the introduction of the cotton manufacture to aliens, and certainly owed to the Dutch improvements in the looms for weaving, and the art of calico printing. The influence of the French on the development of the glass manufacture is proved by the persistence of French names for implements employed in it. Even the metal trades developed under the influence of French, Dutch, and Germans; in Sheffield, in the nineteenth century, French terms were still used for parts of a knife. The reader should not assume from this list (which could be considerably extended) that the English were completely passive, and made no contributions to industrial technique. Their woolens and worsteds came to be considered the best in Europe, for the price; foreign manufacturers tried to secure English cloth makers, and workers in some branches of the metal trades. Yet, on the whole, they had more to learn than to teach in the period preceding the Industrial Revolution. Then, of a sudden, came

a flood of epoch-making inventions, "an outburst of inventive genius" it has been termed, which seem to have changed the course of the world's history. How can this extraordinary phenomenon be explained?

THEORY OF INVENTION

The old theory taught that the inventions proceeded from particular men, heroes, who happened to be on the scene, and without whom history would be altogether different. It substituted one mystery for another. The modern theory is Darwinian in character. It believes that in all periods of history there have been individuals who had a strong taste and a great capacity for invention, but that their ideas commonly died with them. Either they did not express them, or at any rate they could not realize them, in an unfavorable environment. Watt or Arkwright would have amounted to little in a medieval craft gild. Research has shown, in fact, a great number of inventions which died in their infancy because they were prematurely born, and for one of these that we know there must be hundreds and thousands which we do not know, because they disappeared without leaving a trace. On the other hand, when the time is ripe, when society is really ready to make good use of inventions, they flow in from all sources: a spinning machine from a barber, a loom from a clergyman, and so on. In recent times they may be said to jostle on each other's heels. A list has been made of 148 instances in which rival inventions have been made almost simultaneously. Alexander Graham Bell applied for a patent for his telephone in the morning of February 15, 1876; only a few hours later on the same day Elisha Gray arrived at the Patent Office with almost the same idea in mind.

There was an "outburst of inventive genius" in England shortly before 1800, not because a new race of heroes had come into existence, but because a whole society had become ready to appreciate and apply inventions, to discover and stimulate them. Associations were formed, prizes were established, periodicals were founded to develop the inventive faculty. A man who, a hundred years before, would have died unknown, became a great inventor. The reader may have seen the striking change which occurs in the saturated solution of some salt when it suddenly

crystallizes. At the critical point a mere accident, a grain of dust, will change the whole nature of the substance. English economic society, in 1760, was ready to crystallize in a new form. The process needed, for its start, only a slight shock; it could then run rapidly through the whole mass.

ELEMENTS IN MANUFACTURE

What were the conditions under which this transformation could and did take place? The matter may be made more clear by following a ware in the course of manufacture, and thus realizing the links that must be present if the chain is to be complete.

ELEMENTS IN COURSE OF MANUFACTURE

<i>External</i>	<i>Connective</i>	<i>Internal</i>	<i>Combination</i>
Extractive industry	Transportation } Purchasing }	Raw material } Technique } Labor } Capital } Finished ware }	Management
Consumers' market	Selling } Shipping }		

The external conditions may be taken for granted: sources of raw material somewhere, people somewhere who would buy the finished product. Conditions must make possible the transportation of crude material and finished ware. The successful manufacturer must make contracts of purchase and sale, which will cover all costs of shipping and handling plus the cost of manufacture, and will leave him a profit. He must know how to "make" his ware, must follow good processes and use effective tools or machinery. He must hire laborers, train them, direct them, pay them. There must be capital available to pay expenses until returns come in, and to be invested in fixed plant, buildings, and equipment; the manufacturer must be able to borrow from others to supply his own deficiencies.

PROBLEM OF ORIGINS

Not one but *all* of these links must be present to make the chain effective. Let the reader review them, one by one, and he

will realize that weakness in any link would destroy the strength of the chain. The question now before us is this: what link was made so much stronger, in England after 1760, that English manufacture reached a new standard of efficiency, far surpassing that of any other country? It was certainly not any unique advantage in the supply of capital. An agrarian revolution, to be described later, did contribute to a supply of cheap labor, but did not thereby offer a decisive advantage. Most authors have sought the answer in the technical changes involved in the mechanical inventions, or have emphasized the broader market opened up by the spread of commerce. A market certainly was necessary to absorb the product of the new manufacture, and an expansion of trade both at home and abroad attended the revolution—was, indeed, one aspect of it. That it was the active factor, rather than the resultant of other factors, remains to be proved.

RISE OF CAPTAINS OF INDUSTRY

At the risk of appearing to exaggerate the importance of one element in a series, I shall present here the view that England owed her Industrial Revolution to a class of men who had not previously existed there and who did not yet exist elsewhere, a class of industrial managers, "captains of industry." These men saw the opportunities offered by the economic society of the time; they found separate parts and combined them in a whole. Other countries had the parts and later, following the English example, learned how to combine them. No other country, as yet, offered similar opportunities. Old laws and customs in them stifled individual initiative, diverted men of vigor and originality from attempts to establish new forms in industry, or repressed them in any effort to accomplish that end. The reader will understand better why the Industrial Revolution came in England after he has studied the conditions then prevailing in France and other countries.

Earlier pages have emphasized the decline in England of the old inherited restrictions on freedom of enterprise. Bold spirits defied the guilds. Attempts by the central government to regulate industrial activities were half-hearted and ineffective; the laws were a nuisance, but were constantly evaded, and did not stifle

initiative. The threat of a subsidized competition, by the grant of royal monopolies, was swept aside by a vigorous parliamentary opposition. Nowhere else in Europe was such a measure of industrial freedom offered to the individual.

SOCIAL CONDITIONS

England differed from the continental countries not only in the amount of economic freedom. Its social organization also approached much more nearly to the modern type. The aristocracy which ruled the country was a class, not a caste; it was open to newcomers, and was rapidly becoming an aristocracy of wealth rather than of blood. A Frenchman of the period, the Abbé Coyer, wrote a book, *La noblesse commerçante*, extolling the merits of the English trading nobility. Any man, however humble his origin, could hope to rise to the very top of the social order; examples could be cited of many who did so. Again in this respect we find in England, as we do not elsewhere, a source of energy of incalculable importance, unloosing new forces in society. Economic conditions offered an opportunity, social conditions stimulated the able and ambitious to seize it. In no period of English history has a greater number of poor men risen to distinction. "Nothing has so directly contributed to the pre-eminence of Great Britain in manufactures as her race of laborious, skilful and inventive artisans, cherished as they have been by the institutions of a free country, which opened to the possessors of talents and knowledge, in however humble a station, the amplest career of honour and fortune to stimulate effort and dignify success," wrote an early historian of the Industrial Revolution.

SOURCE OF MANUFACTURES

From every source, as one author has said, men flocked to the rising manufacture as to a newly discovered gold mine. One exception only must be made; characteristic representatives of the old order, the landed gentry, showed their unfitness for the competitive system. "There seems a fatality to attend country gentlemen whenever they attempt trade or manufacture," wrote Arthur Young. "In England I never knew a man of landed property, with the education and habits of landed property, at-

tempt either, but they were infallibly ruined; or if not ruined considerably hurt by them." Many men, be it noted, entered manufacture from agriculture, left the fields to build up a factory, but they had been workers, not members of a leisure class. Men of yeoman stock established great manufactures of cotton, of iron, or pottery. Men who became rich in the cotton manufacture had worked in early life as "hatters, shoemakers, carters, weavers, or some other trade." Some men who had been merchant employers under the old system extended their activities and became manufacturers under the new system. Gott, of Leeds, the first great wool spinner, entered the trade as a capitalist, pure and simple. But in general the men who made the Industrial Revolution entered the branch in which they succeeded not from above or from the side, but from below. Only in England could a democratic revolution of this kind take place.

FUNCTIONS OF MANUFACTURER

In this analysis of the leaders in the Industrial Revolution one thing is especially significant: the small number of inventors among them. There were prominent exceptions, possibly Arkwright in cotton and Darby in iron, but as a rule inventors did not succeed in managing a competitive industry. Cartwright, the clergyman who invented the power loom, used a fortune which he had inherited in the attempt to establish a business, and lost it. Radcliffe, who developed a machine for dressing the warp of cloth, failed in business two or three times. He is described as "invincibly obstinate and contracted." What the times demanded was, above all, breadth of view. If the reader will review again the elements that enter into the course of manufacture, the links in the chain, he cannot but be impressed by the variety of functions which the manufacturer must exercise. The "captain of industry" had to have all the trading ability of the merchants; on the contracts of purchase and sale into which he entered depended the success of the enterprise. He must develop markets for his increasing output. Beyond any of these mercantile activities, however, he had to exercise functions which the merchant employer of the old system had never undertaken. He had to determine the process of manufacture in a period of

rapid technical change. He had to choose materials, implements, and machines, not simply because they were best, but because they would pay best. He had to recruit and train a labor force. The difficulty of this task can hardly be conceived by us today, after generations of experience; it is more apparent in a new country, like Russia. Laborers could not be adapted to the work, so the work must be adapted to them; the process was divided into elementary fragments, in one of which a laborer could be taught to specialize. He had to discipline and organize this labor force, make of it an effective unit. As regards capital and credit he had the needs of the merchant plus the demands of a large fixed plant, with its serious problem of depreciation. The one thing which, apparently, he needed least was the faculty of invention. He could hire inventors to work for him as, to a surprising extent, he hired technical experts to direct the details of manufacture. The combination of inventor and business man in one person has been rare in history; the combination of engineer and business man has not been common. The active leaders in the Industrial Revolution were in most cases simply business men.

QUALITIES OF MANUFACTURER

In the careers of these leaders two characteristics stand out prominently. One was their indomitable energy. Arkwright, the pioneer cotton spinner, worked commonly from five in the morning to nine at night. He was a severe economist of time and as he was obliged to travel much to visit his scattered factories he took the road at night in a chaise drawn by four horses. He was the model for his successors. "We all had our eyes fixed on him," said Peel later. Another characteristic was boundless ambition. Arkwright thought of buying up all the cotton in the world, to benefit by the monopoly; he dreamed of amassing a fortune equal to the English national debt. Wedgwood, who supplied all Europe with table ware, planned to introduce earthenware pipe lines first in London, then in the whole world. Boulton, the business man who made the steam engine a practical success, wrote a correspondent, "I should be glad to work for all Europe," and when the proposal to manufacture steam en-

gines for a limited territory was presented to him replied, "It would not be worth my while to make engines for three counties only; but it might be worth my while to make for all the world."

FACTORIES

The Industrial Revolution is sometimes characterized by one distinguishing mark, the factory system. The spread of factories in this period was, certainly, the most obvious external change. Views of the European towns in the preceding period show a few large buildings—churches, hospitals, town halls, gild halls—but nothing to indicate that local concentration of manufacturing industry which was to become one of their most characteristic features. Yet little factories had long existed. So far back as 1339 complaint was made in Bristol that weavers and other workmen were employed in the homes of their masters; a manufacturer of Gloucestershire testified in 1834 that a factory there had been used for the making of fine woolens for about 500 years past. A story or novel written about 1600 described the factory of its hero, John Winchcombe, who married his employer's widow, "a very comley auncient woman, and of reasonable wealth."

Within one roome, being large and long,
There stood two hundred loomes full strong.
Two hundred men, the truth is so,
Wrought in these loomes all in a row.
By every one a prettie boy
Sat making quilts with mickle joy;
And in another place hard by,
An hundred women merrily
Were carding hard with joyfull cheere,
Who singing sat with voyces cleere.

There were further 200 "prettie maids" who spun, 150 children of "poore silly men" who for a penny a day and their keep picked over the wool, various cloth finishers, a complete "integrated" establishment, to use the modern phrase. The story is of no value as a record of fact, but testifies at least to the currency of the idea. Some manufactures, particularly those of glass and metal, early took on the factory form. Defoe (1738) described the Temple Mills on the Thames above London, where brass was made, cast into plates, then beaten into kettles

and pans by great hammers worked by water. Even more elaborate was the silk mill at Derby, run by water and said to have included some 26,000 wheels in its mechanism. Even before the great inventions not only factories but active competition between them existed, "as, for Instance, the Struggle that has subsisted many Years between our two eminent *Fire-Engine-makers*" (1747).

ADVANTAGES OF THE FACTORY

There were reasons for the rise of the factory quite distinct from any advantage to be attained by the application of machinery and the use of outside power. It offered to the manufacturer the opportunity, denied to the merchant employer, of organizing and directing his working force. "The factory system is as distinguishable from the commission [merchant employer] system as the well organized, uniformly equipped regular army from the motley volunteer militia." In a period in which the market was broadening by the spread of trade, in which competition was becoming a vital element, with great rewards for the efficient and corresponding penalties for the inefficient, the advantage of a regular working force, organized and directed on a definite plan, became more and more apparent; and this advantage could be attained only by bringing the workers together, under the eye of the supervisor and directly subject to his commands. So even in industries in which the labor was still hand work the factory was spreading, before the Industrial Revolution.

The advantage of the factory form of organization, already apparent before the application of machinery and power, was magnified many fold as those new elements were recognized. Campbell, in his book on London trades (1747), said that house painting was "at a very low ebb, on account of the methods practised by some color-shops; who have set up horse-mills to grind the colors, and sell them to noblemen and gentlemen ready mixed at a low price, and by the help of a few printed directions a house may be painted by any common laborer at one-third of the expense it would have cost before the mistery was made public." The example is trivial, but it obviously includes important elements: the broad competitive market as opposed to the local monopoly of traditional handicraft, the technical

changes in the process, the superior efficiency measured by the cost to the consumer, and the displacement of labor involved.

POWER AND MACHINERY

Not only could the factory system develop without machinery or power; machinery and power had been employed for centuries without leading to any important development of the factory system. Grist mills were run by water or by wind; blast furnaces were blown and forge hammers were worked by outside power: the fulling mill established itself (against opposition, as will be seen) in the woolen industry. Already in 1719 an English author could boast that "silk stockings are wove; tobacco is cut by engine; deal boards are sawn with mills; lead is smelted by wind-furnaces," and could assert that prices of some manufactures had fallen almost one-half, without any attendant reduction in wages. But the society of the period was still not ready to accept machinery as a natural part of its economic system. Time and again attempts to introduce machinery into established trades were nullified either by the opposition of the workers, the action of the government or the unwillingness of leaders to run counter to those influences. Fulling mills were forbidden by statute, so as to provide more work for laborers. The saw mill, introduced by a Dutchman and run by wind power, "by which machine, with the sole attendance of one man and one boy as much work was sawed as twenty men can perform in the usual way . . . was afterwards put down, lest our labouring people should want employment." The author quoted, writing in 1787, did not then know of a mill of the kind in England, and for many years afterwards boards were still obtained from the labor of men in saw pits, one working from above and one from below the log. Opposition to the introduction of machinery was as strong among the people before and even after 1800 as it had been for centuries earlier; the Luddite riots of 1812 and 1816 were late manifestations of a long series of attacks by armed men aiming to destroy new machinery and discourage its introduction. Yet the use of machinery spread rapidly in this period because at last a class of men had developed who were intelligent enough to realize its possibilities, and who were strong and bold enough to fight for their realization, and because in the government the

regard for the rights of property now predominated over the concern for the fortunes of the laboring class.

GAIN BY MACHINERY

Anyone conversant with the economics of manufacture knows how prodigious is the gain which can, in some cases, be achieved by the introduction of power-driven machinery. At the Atlanta Cotton Exposition of 1881 some people were brought from the mountains to demonstrate the old methods which they still practiced to supply domestic needs. The labor of two carders, two spinners, and one weaver produced eight yards of coarse cotton cloth in a day of ten hours. It was estimated that the same number of persons in a factory would produce 800 yards. A machine has been devised which ties 250 knots a minute in the warp of cloth, and can do the work of twenty girls. Similar examples abound. Such comparisons are dangerous because they omit such an important factor as the labor needed to construct the machine and the engine driving it. When account is taken of this and other neglected factors, the apparent gain is much reduced. A modern economist, whose opinions are entitled to respect, estimates that the productivity of industry has been increased not ten- or twenty-fold, but merely has been doubled by the application of machinery. Accepting this as a conservative estimate we have still, of course, a revolutionary change, transforming the whole organization.

THE TEXTILES

The application of machinery in its developed form, and the spread of the factory system, appeared first in the textile industry. Of man's primary wants, for food, shelter, and clothing, the last named offered by far the best opportunity for the local concentration of production, with its necessary accompaniment, the distribution of the product over a wide area. Agriculture was necessarily extensive, spreading out the producers and keeping them in movement, so making difficult the application of machinery or of power beyond that furnished by the farm animals. Building, again, was a local and dispersed industry, tied to the place of consumption. Clothing, however, comprised large value in a small bulk; the producer did not need to seek out the place of

production of the primary materials or the home of the consumer; he could rely on trade to bring him the raw products and to distribute the finished goods. Clothing is not only necessary to health and comfort, it appeals also to such fundamental motives as self-respect and vanity. At the present day the ordinary family spends 10 to 15% of its income on clothing. Finally, the preparation of clothing from the raw materials is a difficult process, requiring special implements and consuming a great amount of time if all the work is done in the household.

So from the early Middle Ages the most difficult processes were turned over to professionals; among the earliest craft guilds noted in the English records were those of the weavers, fullers, shoemakers, hosiers, and glovers. Estimates of the importance of different branches of manufacture in 1770, just at the outbreak of the Industrial Revolution, show the textiles in the lead among the organized industries. The figures aim to show the value added to the raw materials, and the total, 20.5 or 27 million pounds, should be compared with a total of 66 attributed to agriculture, to realize how far England still was from being an industrial country.

Wool	£ 7 million
Metals	6
Leather	4
Flax, hemp, glass, paper, porcelain . . .	2
Silk, cotton	1.5
	<hr/> 20.5
Work of artisans and shopkeepers . . .	6.5
Total	<hr/> 27.0

EARLY TEXTILE MANUFACTURE

In spite of its importance in the national economy, the textile industry was still primitive in its organization and methods. The raw material, usually wool or flax, was carded or combed by hand, to get the fibers cleaned and parallel. The loose band of fibers was then drawn out with a slight twist, and this again was spun into the finer and more compact yarn needed for the making of cloth. Hand implements, the distaff and spindle, were still in use, but a machine, the spinning wheel, had been introduced at the close of the Middle Ages and had become general. A spinning wheel was an ordinary part of the equipment of a cottage,

for almost all of the spinning was done at home; women worked at that while the men worked in the fields. The price paid for spinning a hank (skein) of 840 yards was 1*d.* The yarn was collected from the countryside either by the agents of a merchant employer or by the weaver himself, to whom it passed for the next important operation. Weaving involved a more elaborate machine, the loom, and more strength and skill; it was performed by men, professionals, but they still worked at home or in sheds attached to the home. Only in the final processes, dyeing and finishing, was the cloth collected in little shops, embryo factories.

SPINNING

Under conditions as they were then, one weaver needed five or six spinners to provide the yarn for his work. The balance of the industry was disturbed in 1733 by Kay's invention of the fly shuttle, thrown between the threads of the warp not directly by the weaver's hand but by little mallets actuated by a cord. This arrangement enabled the weaver to increase both the breadth of his cloth and the speed of his work; it was so manifestly superior that it won adoption in spite of the violent opposition of those committed to the old style of loom. But the weaver now could use the product of eight or ten spinners. Weavers scoured the country to get the yarn needed for their livelihood. In Germany even the soldiers in barracks were set to spinning. The need of some improvement in the spinning process became a matter of common knowledge in a society which was now prepared to rationalize its problems, instead of appealing hopelessly to tradition. The Society of Arts, founded in 1754, and itself an index of the quickening of intelligent public interest, offered premiums for the suggestion of improvements in the spinning wheel, and in 1760 set the specific problem of a machine which would enable one person to spin six threads at once. Within a few years (1761-67) six different models were submitted. It is of little importance that none of them was a practical success. The times were ripe; success was bound to come. It came simultaneously from two different sources, in two different forms. The jenny of Hargreaves and the water frame of Arkwright were both put into practical operation in the spinning of cotton in 1768; they had

been invented shortly before that date and were patented shortly after it. It is not possible here to describe in detail either these or other inventions or the careers of the inventors. It must suffice to say that the application of machinery to the spinning of cotton gave such a convincing demonstration of the possibilities of the new methods as to make certain its extension to other processes, to other branches of the textile industry, and to other manufactures.

WEAVING

The abundance of yarn supplied by the new machinery reversed the situation previously existing, and put pressure on the weaving industry, which had to turn it into cloth. The demand for weavers, working with the old hand looms, was so keen that they prospered greatly. The Bolton weavers, working on fancy muslin, dressed like members of the upper middle class, walked the streets with a cane and with a £5 note stuck in the hat band, and would not enter inns where ordinary tradesmen drank. Their prosperity did not endure long, as will appear in the next chapter. A Kentish clergyman, Cartwright, who had never seen a weaver at work and who had no mechanical training, reasoned that if automatic machinery could be applied to spinning it was equally applicable to weaving. He got a carpenter and a smith to construct from his designs a loom to be run by power, which he patented in 1785, and which, in the hands of others with more worldly wisdom and more technical experience, was gradually introduced in competition with the work of the hand loom weavers.

COTTON AND WOOL

The mechanical inventions were applied mainly in the cotton industry, not in the old established woolen industries.* There were two reasons for this, one technical, one historical. The cotton fiber is more uniform and is stronger than the hair of sheep, and lends itself better to mechanical manipulation. The second

* Strictly, the woolen industry and the worsted industry should be distinguished. The term "woolen industries" is used in the plural to include both.

reason was, however, much the more important. The woolen industries had been established for centuries and were rooted deep in tradition; in form, at least, they were still strictly regulated by statutes which prescribed even the details of processes. The cotton industry had started only after 1600 and enjoyed some of the advantages of neglect. In 1750 it was still relatively unimportant, but it was flexible and open to innovation. Only after the new machinery had proved itself in the cotton manufacture was it adopted, and then slowly, in the woolen industries.

POWER

In this early but decisive stage of the Industrial Revolution steam power played no part. The early factories were operated by water power or by animals. One of the earliest inventors of a spinning machine (Wyatt, 1733) assumed that power would be supplied by horses, wind, or water; the little factory in which the machine was put in operation was run, in fact, by two donkeys. Arkwright's earliest factory was run by horses; one little mill is said to have been operated by a Newfoundland dog. Water power was preferred when it was available, and Arkwright's second factory, containing several thousand spindles and serving as a model for others, was run by water.

If the movement destined to transform the world began and would have continued without the aid of steam, its progress would have been immeasurably slowed, of course, without the contribution of the steam engine. There followed a later period in which steam, particularly as applied to transportation, became a prime factor, and intensified many-fold the rate of advance. But the steam engine, in its developed and efficient form, was a result rather than a cause of the Industrial Revolution. The condition seems to have been the opposite of that pictured by the socialists in their "materialist interpretation of history." "The hand mill creates a society with the feudal lord," said Marx; "the steam mill a society with the industrial capitalist." It would be more nearly correct to say that feudal society made an advance beyond the hand mill impossible, that a capitalist society such as that presented by England in the eighteenth century made the steam mill inevitable.

THE STEAM ENGINE

There had actually been a steam engine of a sort in existence for some 1,900 years. Hero of Alexandria had developed a device similar to the steam reaction turbine or the common lawn sprinkler of the present day. Society had no use for it except for such a trivial application as to turn the spit in the kitchen. By 1600 need was felt for some device to provide a water supply for houses and towns, and to pump water from mines. A crude and wasteful application of steam, Savery's engine, was used to a slight extent. After 1700 the demand for a pumping engine for the mines became more insistent, and was met by an improvement of Newcomen. He used "low-pressure" steam, so avoiding the technical difficulty of making working parts and connections perfectly tight; when the steam under a piston was condensed, a vacuum was created and the pressure of the atmosphere drove the piston down for the pumping stroke. About 100 of these engines were in use in English coal, tin, and copper mines, and a smaller number for the water supply of canals and towns. Some of them were already applied to manufacture, but their use for this purpose may be described as incidental, rather than necessary. The water power at any site was limited and irregular. In a few cases Newcomen engines were introduced which pumped water up and delivered it to an ordinary water wheel. But for any and all of these purposes the use of the Newcomen engine was limited by its extravagance in fuel. At every stroke the cylinder was cooled by a jet of water, and had to be heated again for the next stroke at the expense of a great amount of steam. In districts distant from the coal mines, such as Cornwall, there was a question whether horses were not really a cheaper source of power than steam.

JAMES WATT

The need of an improvement in the steam engine was obvious, and would unquestionably have been met if James Watt had never lived. He was, however, exceptionally qualified, and doubtless saved the world much time. He was a born inventor, a skilled manual worker, employed as instrument maker in the University of Glasgow, and was studying the action of steam even

before he was set to repair a model of the Newcomen engine. To avoid waste he aimed to keep the cylinder always as hot as the steam entering it, an ideal impossible of accomplishment but which at least in large part he attained by the introduction of a separate condenser in which the steam was cooled, while the cylinder itself was kept hot by steam on both sides of the piston and in a jacket around it. The change seems simple; it actually was revolutionary, making practically available the enormous store of energy in coal.

BOULTON AND WATT

Watt was the characteristic inventor, lacking most of the qualities of the business man. He said he would "rather face a loaded cannon than settle a disputed account or make a bargain." Helpless himself to transform his invention into an industrial enterprise, and failing in his first partnership, he had the good fortune to be taken up by Boulton, a man so distinguished for his business ability that he has been nominated as the first to deserve the title "captain of industry." Boulton manufactured small metal wares at Soho near Birmingham, in a factory which for the time was immense, built to contain 600 workmen. He got power from a water wheel, but during the drought of summer had to connect six to ten horses to it, an arrangement which was both costly and inconvenient. Even before Watt's invention he had thought of introducing steam power, and had corresponded with Benjamin Franklin on the subject. He was a creditor of Watt's first partner, Roebuck, and at Roebuck's bankruptcy in 1773 took over his rights in the new invention, which had been patented in 1769. It was still, as Boulton said, "a shadow as regarded its practical utility and value." The tools for metal working were still so primitive that years of costly experiment and failure were needed to make the engine an assured success. Although engines of the new model were delivered from Soho as early as 1775, the business did not return a profit for more than ten years later, and was carried meanwhile by the profits of Boulton's other enterprises, by the sacrifice of some of his capital, and by money which he managed to raise from private individuals and from bankers. The world would have had an improved steam engine if Watt and Boulton had

never lived, but it would have had to wait long if either of them had been lacking, and it would have had to wait still longer if England had not furnished a field of business enterprise in which this expensive innovation could fight its way to success. Even in England a steam grist mill, built to advertise the new engine, was burnt by incendiaries, and a plan to start a cotton mill run by steam power in Bradford was abandoned because residents threatened legal steps against it as a "nuisance."

APPLICATION OF STEAM

Some idea of the application of the new engine is afforded by the figures of the accompanying table, which give both the number and the horse power of engines in different uses.

STEAM ENGINES BUILT BY BOULTON AND WATT, AND
ERECTED IN ENGLAND, NUMBER AND HORSEPOWER

<i>Period</i>	<i>Cotton Mills</i>		<i>Iron Works</i>		<i>Water Works, Canals, etc.</i>		<i>Coal Mines</i>		<i>Copper Mines</i>		<i>Other Uses</i>		<i>Total</i>	
	No.	H.P.	No.	H.P.	No.	H.P.	No.	H.P.	No.	H.P.	No.	H.P.	No.	H.P.
1775-1785	2	9	17	428	10	164	5	100	22	440	10	97	66	1238
1785-1795	47	736	9	150	14	243	22	229	...	...	52	1349	144	2009
1795-1800	35	637	2	40	7	95	3	60	...	...	47	832	79	1296

The reciprocating action of the piston could be used directly for pumping, but had to be transformed into rotary motion for the operation of most machinery. Watt had thought of the simple crank as the obvious means to this end, but the idea had been stolen and patented by another, and he had to use the more cumbrous sun and planet motion. The conquest of the factory by steam power was not immediate. Even in 1838, the first year for which full statistics are available, nearly one-fifth of the power in cotton and worsted factories, nearly two-fifths of the power in woolen factories, were obtained from water.

IRON

The mechanical contrivances of the present age, said an English economist (Jevons), "are mainly but the completion of a system of machine labour, in which steam is the motive power, and iron the fulcrum and the lever." The reader undoubtedly carries iron in some form on his person, is surrounded by it in his building, consumes food and manufactures in the production

and transportation of which it has played an essential part. The world could not be what it is today without iron, further, without cheap iron.

In England, before the Industrial Revolution, iron was far from cheap. A ton of bar iron cost £14 to £17 (\$70 to \$85) by the primitive methods still in use, smelting and refining the metal by charcoal, in little enterprises employing each perhaps half a dozen people. The English industry was threatened with extinction by a growing scarcity of wood, and the larger part of the iron used in manufacture was imported from the Baltic countries, where abundant forests supplied the fuel. The salvation of the English industry was, of course, the substitution for charcoal of coal as the word is now used. This change, in the long run, effected a sweeping reversal of the conditions of production, but it encountered great difficulties due to the impurities in coal, and came about very gradually. The smelting of iron from the ore with mineral fuel was accomplished early in the eighteenth century by the use of coke, from which many of the impurities had been driven off, and by the use of a stronger blast than was needed in the charcoal furnace. The improvement of the steam engine, providing power for the blast, confirmed the victory of coke over coal in this first process. But the crude product, pig or cast iron, had still to be refined for smith's work by the use of great quantities of charcoal, and even then was inferior to the imported product. This was a period in which the attempt was made to substitute cast for wrought iron or steel in many uses, for nails, hinges, agricultural implements, even cutlery. The English iron industry now held its own, but grew very slowly, waiting on technical improvements for further advance.

IMPROVEMENTS BY CORT

The turning point came in 1783-84, from improvements introduced by Cort, a naval contractor. It is significant that one of these, the puddling process, was discovered independently in two different parts of the country at dates only a few months apart; the times were ripe for the change. By the use of a reverberatory furnace, in which the metal was kept away from the fuel and subject only to hot gases, the pig iron could be cooked and worked until it had lost its surplus carbon and taken on the

pasty nature of wrought iron. Then, according to Cort's new treatment, the slow hammer of the forge was used only to prepare the mass for passage between rolls, which turned out a superior product, and reduced greatly the time required. The new process, puddling and rolling, turned out 15 times the product which the tilt hammers had been able to give. The English iron industry developed rapidly from this time. Measuring by the primary product, pig iron, the output was as follows, in thousands of tons:

<i>Year</i>	<i>Amount</i>
1740	17
1788	68
1796	125
1806	258

STEEL

That particular form of iron which has the property of taking a temper, tool steel, had formerly been produced from bar iron by an expensive and time-consuming process; the product sold for £50 to £60 (\$250 to \$300) a ton. A French scientist, Réaumur (inventor of the thermometer), had conceived the idea of melting in an airtight crucible the necessary ingredients, so obtaining a thorough mixture with the proper proportions of iron and carbon. In France the process was never practically applied. In England a clockmaker, Huntsman, of German or Dutch parentage, succeeded after many experiments in developing a similar process, which gave crucible or cast steel of superior quality at a reduced cost. He attained success about 1750, and it is interesting to note that in a recent year (1924) the firm of Huntsman was mentioned as having still a high reputation for its steel, and having on its books accounts still active which had been opened in the eighteenth century.

Thus English industry was now prepared to provide iron in its three important forms, cast, wrought, and steel, in large quantities. The improvements ran parallel in time to the improvements in the textile manufacture, another testimony to the fact that the Industrial Revolution was the product of forces which permeated the whole society and was no haphazard event. There remained still one important task to be accomplished.

Machinery and the steam engine had become realities, iron

and steel were provided for their construction, but machine tools to work the metals, machines to make machinery, were still lacking. The mechanical equipment was still medieval in its simplicity, all depending on the hammer, chisel, and file in the hand of the individual workman. The cylinder of Watt's first engine was not bored, it was hammered into shape; a cylinder of 18-inch diameter might be out of round by $\frac{3}{8}$ of an inch. One of the cylinders of the early engines was cast of solid block tin to facilitate manipulation. The first effective machine tool was a boring mill (1776), which would turn out a 50-inch cylinder not out of round by the "thickness of an old shilling." All of the descriptions and pictures of the early machinery show that wood was used wherever possible. Some of Arkwright's original water frames were still spinning in 1836, "the wooden teeth of the wheels and pinions having ground themselves into the best shapes for diminishing friction." When, however, the first steps had been accomplished in improving the lathe for turning round shapes and devising a planer to give flat surfaces, the results were cumulative; every machine tool made could be used for building a better one. As early as 1800 a screw-cutting lathe of the modern type had been made by Maudsley, whose regard for accuracy was evidenced by his "Lord Chancellor," a micrometer which would measure differences of $1/1000$ of an inch, "quite beyond all the requirements of engineering mechanism," as was said much later.

AGRICULTURE

While the manufacture of England was being transformed, the older and still the more important occupation, agriculture, was passing also through a revolution. Slowly before 1700, rapidly after that date, changes were made in the established methods of cropping and cultivation which increased greatly the yield of land. The introduction of root crops (turnip, carrot), and of artificial grasses (clover, saintfoin), did away with the need of leaving land fallow, since they made entirely different demands on the soil from those of the cereal crops. They supported a greatly increased number of live stock, used as draft animals and for meat; and the extra manure enhanced the yield of the cereals. Turnips, barley, clover, wheat in rotation returned from a given

piece of land double or more what it had yielded under the three-field system. A book by Jethro Tull, *The Horse Hoeing Husbandry* (1733), taught the value of the cultivator, as the implement is called in America today, and had widespread influence.

The improved crop systems were not discoveries of the English; they had been practiced for a long time on the Continent, and were now imported and adapted to English conditions. Their introduction and spread in England were made possible by the important position taken there by the landed gentry. This class, not highly cultivated in the intellectual sense but endowed at least with an acute perception of its economic interests, provided with sufficient capital, and secure in its social and political position, took the lead in the transformation of agriculture as the business men did in the transformation of industry. Without "spirited proprietors," as they have been called, there would have been slow development but no such sweeping change as actually occurred.

ENCLOSURE

Obviously the improvements could not be reconciled with the field systems inherited from the Middle Ages. In a village with open fields and intermixed properties, "unless a large body of ignorant, prejudiced, suspicious co-proprietors agreed to adopt turnips or clover, it was impossible to introduce them into cultivation. The enterprise of twenty farmers might be checked by the apathy or caution of one." The introduction of the new methods involved a sharp break with tradition, of which the outstanding feature was enclosure, the consolidation of the fragments of land so that each proprietor could surround his holding with a ring fence. Then he could manage it as he chose: introducing new crops; arranging for efficient drainage; plowing, cultivating, and manuring more thoroughly; freed from vexatious restrictions and the injuries suffered from negligent neighbors.

The process of enclosure had been going on for centuries, but very gradually. As the advantages of the new methods became evident the process quickened, and in the course of the eighteenth and early nineteenth centuries it swept away the medieval ar-

rangements which still persisted over a large part of England. The process of enclosure and consolidation has always presented a very difficult problem. If exact justice was to be done, the holder of, say, twenty acres in the intermixed strips should receive a compact farm larger or smaller than that acreage, graded nicely according to the particular quality of the land. Further, a villager had certain rights in meadow, pasture, wood, and waste land, and these rights, varying greatly for different classes in the village, should all be recognized in the final division. There is no need to dwell upon the ideal. The reality departed too far from it. Enclosure in England in this period was a ruthless process carried through by "spirited proprietors" who had sufficient social and political power to be able to press their own economic interests with little regard for those of others. In an early period enclosure could be effected by a secret application to Parliament, a body in which the landed gentry were the dominant class. A requirement (1774) that the villagers should be notified of the application by a notice on the church door gave but slight protection. It was a period in which the rights of property were recognized before those of persons. Consent to enclosure in a village was determined by a census of property, in which the large proprietor was given influence according to his acreage; the commissioners who administered the process were nominated by the lord of the manor, the tithe owner, and the proprietors rated according to wealth; in the division of land none went to those who had not already a clear title to land in the village. The numerous class of cottagers, living in rented quarters, who previously had kept cows, geese, or pigs, and had gathered their fuel on the common land, and the squatters who by sufferance had enjoyed similar privileges, found themselves fenced out. Just because a man already owned a large part of the land in a village he could force enclosure, and could appropriate a corresponding part of the land which previously had not been divided.

The class which suffered most from enclosure was the very large class of "laboring poor," which was now forced to rely entirely upon labor in the service of others. The changes do not seem to have entailed actual depopulation in the rural districts, but they caused shifts of population which unsettled

the people. In connection with the hard times of the Napoleonic wars, and abuses in the administration of the poor laws, they helped to make a proletariat, raw material for the working force of factories, and so contributed to the Industrial Revolution.

The class which gained the most from enclosure was the landed gentry, with sufficient knowledge and capital to introduce improved methods. The more modest members of this class, the simple squires, were not so well off. Forced by their social position to a life of some extravagance, many became embarrassed by debt. "There are not poorer men in the world than these gentlemen of small estates and great families."

DECLINE OF SMALL HOLDERS

Between the top and the bottom of the agricultural classes were the small freeholders, the yeomen, who had once been so strong and numerous that they were regarded as the mainstay of the English organization. By the middle of the nineteenth century this class had almost entirely disappeared; peasants of the kind so common in continental Europe persisted only in small numbers in a few districts. The reason for their decline appears to have been social and political rather than economic. Their position was not menaced either by the new methods or by the enclosures to which these led. If they had been content, like their ancestors, to lead a life of simple self-sufficiency, they could have held their own indefinitely. They were, however, surrounded by temptations. With the new methods large landholders could make an acre pay more than could the petty proprietor, and could offer an attractive price for the land. They would offer a price even larger than the return of the land would warrant because of the social distinction and the very practical political advantages attached to the ownership of great landed estates. Men who had made money in trade or manufacture and were ambitious to found a family sought landed property not only as the safest investment but also as the surest avenue to prominence. Alderman Thomson made a fortune in business, married his daughter to an earl, and directed in his will that his money be used for the purchase of land. The earl's property in Westmoreland was made up of 226 separate purchases from yeomen; the yield of the land was doubled, but the

price paid for it was so high that the return on the investment was under 3%. During the fluctuations of prices attending the Napoleonic wars many were forced to sell because they had incurred debts which they could liquidate in no other way. The small freeholder found that he could make a much better living if he sold out and used the proceeds to stock a farm of considerable size. The "piddling husbandry of petty farms" was not nearly so efficient as the agriculture which could now be practiced on farms of several hundred acres. It was commonly estimated that a farmer taking the land of another needed £5 (\$25) an acre for the proper provision of live stock, implements, furniture, and other items. For a farm of 300 or 400 acres, therefore, he would need £1,500 to £2,000 (\$7,500 to \$10,000); the nest egg for the accumulation of this considerable capital would almost certainly come from the sale of land. In the manufacture of the period the artisan either fought his way up to the position of a capitalist manufacturer, or sank to the position of wage laborer. So in agriculture the small landholder, if he was ambitious and efficient, rose to become a capitalist employer of labor; if he was shiftless or extravagant he had to work for others.

QUESTIONS

- What was the significance of the English revolution of 1688?
- What is the conventional account of the Industrial Revolution?
- What is competition? What new elements were introduced by it?
- Illustrate the dependence of England on foreigners in technical matters.
- Contrast different theories of invention.
- Explain the "outburst of inventive genius" in England.
- Distinguish elements in the course of manufacture.
- In which element was the English advantage most marked?
- In what respects did England offer more freedom than other countries?
- How did the English social organization further economic progress?
- From what sources were the new manufacturers derived?
- Explain why inventors did not commonly succeed in business.
- Illustrate characteristic qualities of the new leaders.
- Were factories first introduced by the Industrial Revolution?
- What were the advantages of the factory system?
- Was power-driven machinery first introduced by the Industrial Revolution?
- Illustrate the apparent and the real gain by machinery.
- Explain why the new methods first appeared in textile manufacture.
- What was the early organization of the textile manufacture?

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- What was the course of invention in the textile manufacture?
Why were the inventions applied to cotton rather than wool?
What was the relation of power to the Industrial Revolution?
What was the course of invention in the case of the steam engine?
What were the peculiar qualifications and the great improvement of James Watt?
What were the qualifications and contribution of Boulton?
To what uses was Watt's engine first applied and in what uses did it find an expanding field?
What improvements were effected in the English iron and steel manufacture, 1700 to 1800, and with what results?
Illustrate improvement in machine tools.
Explain the nature and advantages of the new system of rotation of crops and its relation to enclosure.
What were the theoretical difficulty and the practical process of enclosure?
What class gained, what classes lost by enclosure?
Explain the disappearance of the peasant class.

READING

The best book on the subject of this chapter is the translation of Paul Mantoux, *The Industrial Revolution* (N. Y., 1928). A teacher desiring to extend the topics below will find every chapter in that book of interest and importance. The encyclopedias also provide excellent reading on the development of different branches of manufacture (cotton, wool, iron, steel), on the steam engine, and on the careers of inventors (Arkwright, Crompton, Cartwright, Watt, etc.). Eileen Power, *The Industrial Revolution, 1757-1850* (Economic History Society, London, 1927), provides an admirable select bibliography of 30 pages, with references to other bibliographies.

Arthur Birnie, *An Economic History of Europe, 1760-1930*, N. Y., 1930, covers a broader field.

Survey of recent economic development. (Clough and Cole, chap. 11, pp. 393-419; Heaton, chap. 17, pp. 408-418.)

Economic development in relation to society, politics and thought. (Clough and Cole, chap. 15, 509-531.)

The industrial revolution. (George, chap. 6, pp. 142-165; Birnie, chap. 1, pp. 1-13; Slater, Introduction, part 2, pp. xxix-xli.)

Invention and machinery. (Heaton, chap. 21, 502-516.)

Comparison of conditions before and after the revolution. (George, chap. 8, pp. 192-212.)

Development of agriculture. (Heaton, chap. 18, pp. 420-433.)

Machinery in early English industry. (Pratt in *Journal of Political Economy*, Oct., 1914, 22:755-790; Nef in *Economic History Review*, Oct., 1934, 5:3-24.)

Industrial invention: heroic or systematic? (Article with that title in *Quarterly Journal of Economics*, Feb., 1926, 40:232-272.)

Are inventions inevitable? (W. F. Ogburn and Dorothy Thomas in *Political Science Quarterly*, March, 1922, 37:83-98.)

The potteries in the Industrial Revolution. (V. W. Bladen in *Economic Journal*, Supplement No. 1, Jan., 1926, pp. 117-130.)

CHAPTER IX

England in the Nineteenth Century

If we take the date 1768, marked by the inventions of Arkwright and Watt, as the beginning of the Industrial Revolution, we have just about a generation left at the close of the eighteenth century in which the Revolution pursued its course. That was a period of beginnings, momentous in establishing new types of organization and a new spirit of competition, but still showing little of the latent possibilities. The nineteenth century was a period of realization, in which these possibilities were developed to an extent of which the wildest imagination had not dared to dream.

GROWTH OF POPULATION

A measure of the change is supplied by figures of population. The efficiency of an organization can be tested in a rough way by the number of people it will support on a given territory. In round millions the population of England and Wales was at different dates as follows:

<i>Year</i>	<i>Population</i>	<i>Year</i>	<i>Population</i>
1500	3 million	1830	14 million
1600	4 million	1850	18 million
1700	6 million	1870	23 million
1750	6 million	1890	29 million
1800	9 million	1910	36 million

When King wrote, about 1700, he expected the population to double in 600 years, and to double again in the succeeding 1200 years, so that at the date 3500 A.D., "in case the world should last so long," it would amount to 22 million, and would be incapable of further increase because there would be only 2 acres of agricultural land per head. A comparison of these estimates with the actual figures shows why we are justified in speaking of an economic "revolution" about 1800. Contemporary thinkers

were not blind to the import of the change. Malthus focused attention on it by the book published in 1798, finding the growth of population checked by "the grinding law of necessity; misery and the fear of misery." Much later Disraeli made one of the characters in his novels ask: What was the invasion of the Roman Empire by the barbarians compared with the census figures of population? Over 300,000 strangers arrive each year! How will you feed—clothe—house them? What kingdom can stand against it?

TURNING POINT IN 1873

Answers to these questions will be attempted in the following pages. It will be shown that the Industrial Revolution initiated a growth in economic efficiency so powerful that it not only could provide for these increasing numbers but even could raise their standard of living above any known in previous history. The progress, however, was not without a check. A commercial crisis, in 1873, affecting the whole world, was a turning point. After that date, as before it, England continued to develop in population and wealth. The position of unquestioned primacy, however, which England held, both in industry and in commerce, through three-quarters of the century, was in doubt at its close. The present chapter will survey the history of the English organization up to 1873, in the period through which England led all other countries in developing the possibilities of the Industrial Revolution. The next chapter will cover the period from 1873 to 1914, in which the pace of progress appeared to slacken, measured in comparison with the advances of some other countries.

POLITICAL CONDITIONS

England entered the nineteenth century with political institutions which seem to a later generation intolerably bad. Laws were made and executed by an aristocracy of landed gentry. The House of Commons, elected by little over 15,000 voters, was in fact under the control of members of the House of Lords, who determined elections in the "rotten boroughs" by family influence and by bribes of money and office. The administration was full of sinecures, and was used as a source of profit to the ruling class. Lord Stowell wrote Peel in 1829, asking the place of Comp-

troller of Customs at Newcastle for his nephew. The nephew, "an excellent young man, was not able to acquire sufficient knowledge to answer the expectations of the examiners of the present day at Oxford," but his mother said he had "considerable arithmetical skill and information," and the appointment would be "of immense importance to him as it would introduce him to a highly advantageous marriage." The later fortunes of the young man are not recorded; he serves well enough as an illustration of the conditions prevailing.

SOCIAL CONDITIONS

A deep chasm separated this leisure class from the mass of the people. The workers and the people were becoming conscious of it. A paper posted in the Manchester market place in 1801 set forth the situation in the form of a dialogue between a large group of poor laborers and a small group of the ruling class.

People. And what business do you follow in our society?

Distinguished Class. None: we are not made to work.

People. How then have you acquired your Riches?

Distinguished Class. By taking the trouble to govern you.

Writing considerably later, Disraeli pictures a delegate of the people saying to a peer, "You govern the most miserable people on the face of the globe." Are they lower than the Portuguese, Poles, Russians, Neapolitans? "Infinitely lower, for they are not only degraded, but conscious of their degradation. . . . They are sufficiently enlightened to feel they are victims."

Scattered through the country districts the agricultural workers could do little to organize resistance against this situation; sporadic agrarian outbreaks, marked by rick burning and the destruction of agricultural machinery, were of slight effect. The industrial workers, on the other hand, concentrated in the growing towns, were a real menace. Neglected by the government in regard to education, health, and moral welfare, they appear to modern eyes as rough barbarians. "Lancashire brute" was a common and appropriate appellation. A stranger, an "outcomling," was hooted in the towns and sometimes pelted with stones and brickbats. For sports they ran races naked through the streets, forced old women to race in sacks, fought "up and

down," that is nearly to a finish, with kicking and throttling allowed. A crowd of them was a threat that shops might be plundered.

REFORMS

Some authors think that England in the early part of the nineteenth century was on the brink of a great social revolution. The danger was averted by a concession of the ruling classes, in accepting a reform of the House of Commons in 1832. It is interesting and significant that the threat which brought this concession was aimed not so much at the military as at the economic position of the government. Such movements as had occurred in the past, parades of men with pikes and with flags "Bread or Blood," could be put down by force. Army and police were powerless, however, against a movement of a new kind organized by a London tailor, Francis Place. He proposed to ruin the credit of the government and to dislocate the normal functioning of trade; he believed that the stoppage of supplies to London would, in a very few days, throw "a starving and an enraged populace" into revolution. In May, 1832, cards began to appear in windows, "No taxes paid here," and people began to worry about their food supply. The Duke of Wellington, at the head of the government, was determined still to preserve the old political system. Then Place drew up a placard, "To stop the Duke, go for Gold," and had this printed and distributed not only in London but through the country. There was a run on the Bank of England, the authorities became frightened, the duke yielded, and the Reform Bill was passed.

The Reform Bill was very far from a democratic measure, according to modern standards. It left the landed gentry still in control both of the House of Lords and of the House of Commons, although it did make the latter easier of access by members of the middle class. Its significance lay in the recognition by the ruling class that there was a power in the people which, however little it counted in constitutional forms, could not be disregarded in fact. It is no mere coincidence that the reform of the House of Commons was followed by reforms in education, in the poor law, in the municipal governments, in the protection of factory labor, in the systems of taxation and of trade regula-

tion. The student of the period faces a difficulty in that he must appreciate some progressive elements in English legislation from this time on, while he finds still persisting in the minds of the legislators some fundamental ideas, carried over from the eighteenth century, which often determined the policy of the government and the fate of people, and which seem to us now almost shocking.

BURKE'S THEORY

We may choose for illustration a pamphlet written by Edmund Burke, addressed to the government in a time of serious dearth. Burke was a noble thinker; we must recognize the peculiar difficulties of the time, and must note that Burke accepted charity as a Christian duty but would have it a matter of private discretion. Here are some extracts. "Labour is a commodity like every other, and rises or falls according to the demand"; * "labour must be subject to all the laws and principles of trade." We must manfully resist the idea "that it is within the competence of Government, taken as Government, or even of the rich, as rich, to supply to the poor, those necessities which it has pleased the Divine Providence for a while to withhold from them. We, the people, ought to be made sensible, that it is not in breaking the laws of commerce, which are the laws of nature and consequently the laws of God, that we are to place our hope of softening the divine displeasure to remove any calamity under which we suffer, or which hangs over us."

PROPERTY VERSUS PERSONS

The ruling class was a propertied class, the working class had practically no property. Time and again, in surveying the legislation of the period, the student is reminded of Goldsmith's line, "Laws grind the poor, and rich men rule the law." The emphasis on property, at the expense of persons, is the keynote of the period. When Fox set out to define liberty he began with property. "Freedom, according to my conception of it, consists in the safe and sacred possession of a man's property, governed by laws defined and certain; with many personal privileges, natural, civil

* The Clayton Act of Oct. 15, 1914, U. S. Statutes, 28:730, enacted: "Sec. 6. That the labor of a human being is not a commodity or article of commerce."

and religious, which he cannot surrender." A committee of the House of Commons, in 1806, gave a new reading of the rights of Englishmen: "The right of every man to employ the Capital he inherits or has acquired according to his own discretion, so long as he does not infringe on the rights or property of others, is one of those privileges which the free and happy Constitution of this Country has long accustomed every Briton to consider as his birth-right." The people passively accepted this view. *John Halifax, Gentleman*, a book written by Mrs. Craik in 1857 giving a vivid picture of English life in the first half of the century, tells how John quieted a mob which was angry because a miller would not sell flour in a time of scarcity. "'It was *his* wheat, not yours. May not a man do what he likes with his own?'" * The argument seemed to strike home. There is always a lurking sense of real justice in a mob—at least a British mob." The most extraordinary instance of the confusion of property and liberty appears in the report of a committee in 1816. A child of four years had been sold by a beggar woman for 8 guineas to serve as a chimney sweep; the sweeping of chimneys was still done by children who in some cases were forced to enter flues so small that they suffocated in them. "Is not £8 a large price?" "Oh yes, very large," replied the master sweep. "Why was so large a price asked for that boy?" "Because this is a free country." "Was he a small boy?" "Yes, very small of his age."

RICH AND POOR

Disraeli, the great Conservative statesman, gave to his novel *Sybil* the subtitle "The two nations," meaning by that the rich and the poor. His object was to bring the two nations together, keeping political power in the hands of an aristocracy but exercising it for the benefit of all. Most people at the time assumed the contrast of rich and poor as natural and inevitable. Some even preached it as desirable, carrying into the nineteenth century a doctrine which had been generally held in the seventeenth. An English clergyman, writing on the poor laws, represented this attitude. "It seems to be a law of nature that the poor should be

* The phrase, "Have I not the right to do what I like with my own?" is commonly ascribed to the Duke of Newcastle, in answer to a reproach for selling a rotten borough to the highest bidder in 1829.

to a certain degree improvident, that there may always be some to fulfil the servile, the most sordid and the most ignoble offices in the community. The stock of human happiness is thereby much increased, whilst the more delicate are not only relieved from drudgery and freed from those occasional employments which would make them miserable, but are left without interruption to pursue those callings which are suited to their various dispositions and most useful to the state." The author, who appeared on the title-page as "a Well-wisher to Mankind," thought that the poor became "reconciled to the meanest occupations . . . whilst the hope of their reward makes them chearful in the midst of all their dangers and their toils," and this "chearful" doctrine was not infrequently preached. It was losing ground, however; enlightened economists and clergymen were beginning to teach the desirability, from the standpoint of society, of a more equal distribution of incomes.

SOCIAL CLASSES

Class distinctions of an earlier period persisted, although the lines of separation were not so sharp and the barriers to promotion were not so serious. John Halifax, who in the story rose from the rank of tanner's apprentice to that of gentleman, told a young lady that they were not equals, "'and I doubt if even you yourself would wish us to be friends.' 'Why not?' 'Because you are a gentlewoman and I am a tradesman.' The news was evidently a shock to her; it could not but be, reared as she had been." She colored and remained silent.

People continued commonly not only in the same class but even in the very occupation of the father. A London doctor who gathered statistics which showed this fact reflected that in the society of the time circumstances placed "those who enjoy the great blessing of legal freedom in bonds almost as hard to break as those which bind the limbs of the slave."

A report of the time (1842) distinguished three classes in society, grouping those who might naturally sit at table together and who would intermarry: the gentry, from the peer down to the rural doctor and attorney; tradesmen, from the London merchant to the village retailer; laborers, from the skilled artisan to the pauper. The practical importance of being born into one

class or the other is vividly illustrated by a table accompanying the report, which gives for England proper the "expectation of life," the average age at which people would die, under different conditions. The table is reproduced here with figures rounded, and with the caution that they are only rough estimates.

<i>Locality</i>	<i>Gentry</i>	<i>Tradesmen</i>	<i>Laborers</i>
London	35-45	20-30	15-25
Country	50	45	35

HAND LOOM WEAVERS

In tracing the history of the industrial workers it will be convenient to consider first the fortunes of those who had been trained to work by hand, and who continued to produce with simple machinery, at home or in little shops, while the factories grew up about them. They were in many cases fighting a losing fight, and their history is one of the saddest features of the period.

The hand loom weavers had been a prosperous class in the eighteenth century; they were gradually killed off in the nineteenth, although some few actually plied their trade even after 1900. They were a prey both to the system of competition, which found in them scattered individuals easily exploited by employers and middlemen, and to the system of machinery, as the power loom was developed. Their earnings dropped to 10 and even 5 shillings a week. A surgeon investigating conditions at Preston in 1831 found earnings a little over 5 shillings, but found about a quarter of the poorest families with little over one penny per head per day for food and clothing. A government official thought that he discovered evidence of decaying intelligence among the hand loom weavers of Scotland. They had formerly supported book societies, and had read history, travel, science, and philosophy; in 1839 they were reading newspapers, *Chambers's Journal*, and Scott's novels (!). But it was in Scotland, when hand loom weavers were working 18 and 19 hours a day to earn 4 to 7 shillings a week, that a weaver gave this answer to the question whether he considered the introduction of machinery objectionable. "We do not. The weavers in general of Glasgow and its vicinity do not consider that machinery can or ought to be stopped or put down. They know perfectly well

that machinery must go on, that it will go on, and that it is impossible to stop it." It was from Dumfermline in Scotland that Carnegie, a damask weaver thrown out of work by the introduction of machinery, emigrated to Pennsylvania with his son Andrew, then ten years old.

FRAME WORK KNITTERS

The frame work knitters, making stockings at home with a machine worked by hand, were another declining class which, little by little, was submerged. A report of 1833 described them as earning 6 or 7 shillings a week by working 14 hours a day. They were a prey to competition rather than to machinery; they bid against each other for work and offered their labor at such low rates that it was unprofitable to introduce power machinery and the factory system.

These hand trades and others like them fell a sacrifice to the new order. Some writers think that they might at least have been assured a "painless death" if the principles of later times had prevailed, if the workers had insisted on maintaining a decent standard of living and had left the trade (as did Carnegie) when that was threatened. Scattered, unorganized, bewildered, and hopeless in a world which they did not understand, they lacked the support from above which, if it did not rescue them, might at least have alleviated their wretchedness.

THE LABOR CLASS

Long before 1800 there had appeared in English industry the beginnings of a labor class: a group of people destined throughout their lives to work for the profit of others, and destined to transmit this position to their children. They had not been so numerous, however, as to constitute a problem; and they did their work scattered in little shops or in their homes. The Industrial Revolution, in its outcome, made this class the most numerous in the community. It drew workers from shop and cottage into the factory, subjected them to rules fixing hours and methods of work, established a dependence which seemed to threaten their lives as individuals.

Naturally enough no one would work in a factory who could make a living outside, who was not forced to it by "the grinding

law of necessity, misery and the fear of misery." Even the village cobbler looked down on a factory worker. Factories were associated in the minds of the people with the work-houses which had been used to exploit the labor of paupers. In Scotland, "the more respectable part of the surrounding inhabitants were at first averse to seek employment in the works [cotton mills], as they considered it disreputable to be employed in what they called 'a public work.'" In other Scottish mills the work people "were gradually moulded into a respectable community"; "the better part of the surrounding population were ultimately attracted to the work"; "the population connected with the works are much respected by the population of the surrounding country, and associate freely with those of their own grade; and intermarriages with the agricultural population are not infrequent."

FACTORIES

Physical conditions in the early factories would in themselves explain the reluctance of workers to enter. Ceilings were low; one of Arkwright's mills which lasted into the later period had to have every second floor removed to meet the later requirements of air space. Windows were small, and were often kept closed to retain the moisture desired for textile work. The air was bad at best and became almost intolerable when candles or lamps were lighted for the hours of darkness, so long in a northern latitude. Roebuck wrote his wife from Glasgow in 1838 that he had seen a cotton mill, "a sight that froze my blood. The place was full of women, young, all of them, some large with child, and obliged to stand twelve hours each day. . . . The heat was excessive in some of the rooms, the stink pestiferous, and in all an atmosphere of cotton flue. I nearly fainted." *

HOURS

The hours of work in the mill described by Roebuck began at 5 in the morning and closed at 7 at night, with 2 hours off

* Yet Roebuck opposed factory regulation and in a speech in the House of Commons in 1844 said, "It won't do to come down to this House with exaggerated descriptions of misery, of want and of suffering. I deny them all." "Oh, Oh!" from the House. Hutchins and Harrison, *History of Factory Legislation*, 1903, p. 91. Cf. Wallas, *Life of Place*, p. 174.

for meals. In the Manchester district, 1825, the working day commonly extended from 6 A.M. to 8 P.M., with half an hour off for breakfast, and an hour for dinner; in the Bradford district, about the same time, the hours were from 6 A.M. to 7 P.M., with no pause for breakfast and half an hour for dinner. Factory girls would subscribe to pay a man who went through the dark streets in the early morning, touching their windows with a pole, to warn them that it was time to get up. Intolerably long as these hours seem, they were no worse than the workers had been used to in handicraft or in cottage industry, and they were exceeded at this time in countries on the Continent.

WAGES

It is impossible to state, with any assurance, the average wage paid. A government official, writing in 1839, put it at 10/6 (say \$2.65) per week per head in a Lancashire factory. This was less than a journeyman had been paid in the eighteenth century, but this average applied to all employees, men, women, and children, and employment was open now not only to the head but also to other members of the family. Family earnings had certainly increased. Growth in consumption of such articles as tea, sugar, and bacon confirms that fact. Pitifully small as the wages seem, they were, at least, higher than those paid to factory workers at the time in other European countries. An element of uncertainty attaches to any figures which could be cited, in that the nominal wage was subject to reduction by fines, and too often was paid in truck which the worker had to take at exaggerated prices. John Bright, in a letter written about 1842, said: "Bolling of Bolton gives his men a key of a house when they come to work for him, and they pay rent whether they occupy or not."

CHILD LABOR

A feature of the new factory system which is presented in touching form in Mrs. Browning's "Cry of the Children" (1844), and which has horrified a later generation, is the suffering of the young, set to work by public authority (overseers of the poor) or by their parents. The textile factories offered much work which children could do, and were eager to employ workers

who were at the same time docile and cheap. Over one-third of the factory operatives in England, about 1835, were young persons, of whom half were under 14 years of age. The cotton mills at Warrington, 1818, working from 5:30 in the morning to 8:30 at night, employed children of whom many were under 8 and some under 6 years of age. The children were called out of bed at 5 and reached home again at 9; they were clad in rags or half naked. The effect on the young generation, both physical and moral, can better be imagined than described. A feature which to us now is perhaps the most shocking is the contemporary defense of the practice. Children's work was pictured as really beneficial; "it is rendered a comfort by the regular hours of rising from and retiring to bed, and the most systematic regulation by which refreshments are brought to them." One author asserted that "juvenile labour . . . in factories is in fact a national blessing." Here again, however, we must be on our guard against a misinterpretation. However bad the facts (and their evil can hardly be exaggerated), they were not the fruit of the factory system. They had existed in a form fully as bad in the period before the Industrial Revolution and they persisted in industries outside the factory system. Actually, as will appear, the spread of the factory system made it possible to remedy the evil by legislation.

CONTEMPORARY CRITICISM

John Stuart Mill, who in his sympathy for the laboring class struck a new note in political economy, wrote in 1848: "I confess I am not charmed with the ideal of life held out by those who think that the normal state of human beings is that of struggling to get on; that the trampling, crushing, elbowing and treading on each other's heels, which form the existing type of social life, are the most desirable lot of human kind, or anything but the disagreeable symptoms of one of the phases of human progress." "Hitherto it is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being. They have enabled a greater population to live the same life of drudgery and imprisonment." The status of the factory worker was often compared to that of the slave. A West Indian slave master said: "I have always thought myself disgraced by being

the owner of slaves, but we never in the West Indies thought it possible for any human being to be so cruel as to require a child of nine years old to work twelve and a half hours a day." Robert Owen, an English manufacturer, wrote regarding Jamaica: "The slaves . . . are better dressed, more independent in their look, person and manner, and are greatly more free from corroding care and anxiety than a large portion of the working classes in England, Scotland and Ireland." Disraeli made one of his characters say: "There is more serfdom in England now than at any time since the Conquest . . . there is no comfort to cheer and no sentiment to hallow the Home."

Actually, although Mill exaggerated when he said that the new system "had not lightened the day's toil of any human being," and although the working people were in some respects better off than before, there seems little doubt that if we had any measure of happiness we should find this new generation depressed far below its predecessors. We must judge the period, in Mill's words, as "one of the phases of human progress," tolerable only as a stepping-stone to something better.

TOWN LIFE

The difficulties of the transition were intensified by the migration from the country districts to the towns, from the life of the fields to the life of the factory and city streets. The census of 1851 showed for the first time nearly equal distribution in rural and in urban districts. The towns were not ready and could not be made ready to accommodate the flood of newcomers. A report of 1840, on the Health of Towns, gives a frightful picture of the conditions. In Liverpool one-fifth of the working classes, in Manchester over one-eighth, lived in cellars, most of them "dark, damp, confined, ill-ventilated and dirty." A Liverpool doctor testified that he had known four families to live in one room about 10 feet square: "that is not a very frequent occurrence; in cellars frequently that is the case." A London official testified: "It is no uncommon thing to find five or six families in one room. I have seen a donkey in the same room; and I have seen, upon another occasion, pigs living in the same room; and also stale fish." Provisions for the supply of water and the disposal of sewage were still rudimentary, and the filth was

indescribable. Typhus fever, a filth disease, raged persistently; it never left Glasgow, which was one of the worst of the towns as regards housing. A fever doctor of London stated that it would be false to say that no more attention to health was paid in building houses for human beings than in making sties for pigs; the pigs got more attention because they were the property of an owner who had an interest in them! The table of average age at death, on a previous page, is an awful indictment of the conditions of the time. One author estimated that every individual in Lancashire, on the average, lost 19 years of life by preventable disease. The committee which reported on these conditions said that it was painful to contemplate, in the midst of an opulent community, "the instruments by whose hands these riches were created, condemned for no fault of their own, to the evils so justly complained of, and placed in situations when it is almost impracticable for them to preserve health or decency of deportment, or to keep themselves and their children from moral and physical contamination; to require them to be clean, sober, cheerful, contented, under such circumstances would be a vain and unreasonable expectation."

The concentration of workers in factories, evil as were in many ways its results, contained in itself, nevertheless, new elements of hope for the future. It facilitated the association of workers to represent their particular interests, and it made possible some supervision and regulation by the government.

ORGANIZATION OF LABOR

From early times there had been "conspiracies" and "lawless clubs" of workers, but the first trade unions, permanent associations of wage earners to maintain and improve the conditions of employment, did not establish themselves until after 1700. Through the greater part of the eighteenth century they remained obscure and relatively unimportant. The government of that period still proposed to represent the interests of the working classes. Toward 1800 two changes of importance were felt. The government adopted the principle of *laissez faire* and refused now to determine disputes over wages; at the same time it became nervous about the possible dangers presented by free associations of workingmen. Acts of 1799 and 1800 provided for

the summary trial and for the imprisonment of workmen who associated themselves to obtain advance of wages, reduction of hours, or any other change in the conditions of employment. Thus in the full tide of the Industrial Revolution the government which had ceased to provide protection refused to allow the workers to protect themselves in the only way in which they could, by association. This action can hardly be excused; it can be explained by fear of revolutionary movements while the war against Napoleon was in progress. The government frankly followed class interests. It allowed employers to combine to depress wages, and to circulate blacklists, while it savagely attacked combinations of employees. The magistrates did not even pretend to be impartial. "Justice was entirely out of the question; the working-men could seldom obtain a hearing before a magistrate—never without impatience and insult; and never could they calculate on even an approximation to a rational conclusion . . . the gross injustice, the foul invective and terrible punishments inflicted would not . . . be credited."

TRADE UNIONS

Francis Place, the London tailor from whom this quotation is made, managed to obtain the repeal of the laws against labor combinations in 1824-25. Henceforth a combination for the sole purpose of fixing wages or hours was legal. The term "trade union" now came into use and labor organization extended greatly. The new unions retained some of the characteristics of secret societies, the ritual and initiation ceremonies; they used the weapons of the strike and boycott with a good deal of violence and intimidation; "sometimes feared and hated by the propertied classes; sometimes merely despised; always oppressed and miserably poor." They were in the awkward period of infancy, learning only by bitter experience. Their field of freedom was small, as both law and judges were against them so soon as they overstepped the narrow limits allowed by the statutes of 1825. Under the old law of master and servant the laborers of the period resembled a subject class. Under the influence of the "wage-fund theory" economists taught that the unions were really opposed to the interests of labor, that an increase of wages for one group of laborers could be obtained only at the expense of

other laborers. The unions fought their way up against difficulties which seemed insuperable. Only at the very end of the period, 1875, did they win a fairly secure position. The statute of that year was significant in its very title, "Employers and Workmen Act," instead of the old "master and servant." It made employers and workmen equal parties to a contract. It removed the effects of a court decision which made unions illegal, as acting in restraint of trade, even if they were not criminal; it permitted peaceful picketing, and repealed the provisions of the criminal law under which, for example, seven women had been imprisoned for saying "Bah!" to a blackleg. Trade unions had now so large a membership and were so well organized that even in politics they had to be regarded. They could look forward to the coming period with confidence that now at last they had a fair legal standing and could effectively represent the interests of labor.

In this same period, the first three-quarters of the century, the government itself recognized, little by little, its responsibility for the protection of laborers against exploitation under the new system of competition. Curiously enough we have again at the very end of the period a law which summed up and extended previous legislation and could be taken as a charter of the factory worker for the future, the Factory and Workshops Act of 1878.

FACTORY ACTS

The first factory act, passed in 1802, went but a little way in its general provisions, requiring textile factories of any size to be whitewashed twice a year, and to have tolerable window openings. It applied for the most part to the parish apprentices, the children of poor parents who were shipped off in gangs to work in the factories. They were to work not over 12 hours a day, not at all at night; were to be taught the elements of reading, writing, and arithmetic; they were to have a fresh suit of clothes once a year, and were to sleep not more than two in a bed. An extension of the act, to make it apply to "free" children, was vigorously opposed by the manufacturers and was obtained only in 1819, when the employment of any child under nine years in a cotton mill was prohibited. This act was, like the other, of little importance, as no provisions were made for a corps of inspec-

tors to see that it was carried out. The experience of many countries has proved that in matters of this kind good laws are of no avail unless they are administered by a staff of trained officials. In this respect an act of 1833 marked a turning point, as it provided for salaried inspectors to execute the law. Even so, however, it proved extraordinarily difficult to prevent the employment of children under nine years of age, who were sent to the mill by their parents, armed with baptismal certificates, extracts from family Bibles, certificates purchased from other children or provided by a dentist or a cow-doctor, to prove that they were over age. Provisions for education of the children were similarly hard to execute. An inspector found one school held in the boiler room by the stoker, when he was not tending the fire; in another case a school voucher was signed with the teacher's mark, as he was unable to read or write! The reports of the inspectors furnished such convincing evidence of the need of regulation that progress was persistent, although uneven, from this time on, and regulation was extended from textile factories to others, and to mines. An epoch in the development was marked by the passage in 1847 of an act which limited the working hours of women and young persons in textile factories to 10 in the day. As other laws were passed to confirm and extend this, and as it was unprofitable to keep men at work when a large part of the force was dismissed, the ten-hour day became normal in the factory industry. The English, first to introduce the factory system, were the first to face the problem of its regulation. Slow and inadequate as seems the progress, judged by the conditions which needed correction, the laws were little by little worked into effective form, and served as models for other countries to follow. How complex was the problem may be judged from the act of 1878, which combined many previous laws into a consistent whole; the text of this act covered 65 pages, and the mere table of contents filled 8.

AGRICULTURE TO 1846

When Gregory King wrote, about 1700, three-quarters of the English people were occupied in agriculture, and the country at that time and through most of the eighteenth century produced a surplus of food for export. The Industrial Revolution changed

the balance. About 1800 the proportion in agriculture had declined to something over a third, and a bad season implied a serious dearth. The price of wheat, which had been considerably below 48s. a quarter (say, \$1.50 a bushel; a quarter contains 8 bushels), rose to 80s. and above. In 1801 it reached the price of 155s. (nearly \$5 a bushel). In this period of the Napoleonic wars the fluctuations in price were tremendous; in 1804 the price had dropped below 50s. The speculative possibilities tempted small landowners to sell out, and use the capital to rent large farms; some made fortunes and many were ruined. The corn law of 1815 protected the home market from imports unless the price should rise above 80s. (say \$2.50 a bushel), but in fact it rarely reached that figure, and through most of the century, 1820 to 1880, it ranged in general from 50 to 60s. (roughly, \$1.50 to \$2 a bushel). This was the period in which the large landowners confirmed their position by buying out the remnant of the freeholder class. The number employed in agriculture continued to increase slowly up to the middle of the century, when it formed about a fifth of the total; from that point it began to shrink, not only relatively but absolutely. The repeal of the corn laws in 1846 was significant in marking the acceptance by England of the fact that it could not hope to be self-sufficient in the supply of food, but it had no great immediate effect. Only after 1873 did the improvements in means of transportation open the English market fully to the cheap food of North America and of other continents.

OWNERSHIP OF LAND

At this time (about 1873), the distribution of landed property in England and Wales had taken the form pictured in the accompanying table.

<i>Class</i>	<i>Number of Owners</i>	<i>Acres</i> (Millions)	<i>Typical Estate</i> (Acres)
Peerage	400	5.7	10,000
Great landowners . . .	1,288	8.5	3,000
Squires	2,529	4.3	1,000
Greater yeomen	9,585	4.8	500
Lesser yeomen	24,412	4.1	200
Other	934,797	7.0	
Total	973,011	34.5	

The table shows an extraordinary concentration of landed property. More than half of the area of England and Wales was owned by about 4,000 proprietors. The class of small freeholders had practically disappeared. Representatives of it still existed, for example, in Lincolnshire, but an American student who searched for them in 1899 found only a scattering few. Under the head of "Other" in the table came a large amount of waste, and land owned by public bodies; peasant proprietors, as a class, were negligible. The figures refer only to England and Wales. If they were stretched to cover the whole United Kingdom the concentration would appear even more marked, and the correspondence of landed property with social and political prominence would be striking. Taking representatives of different ranks in the peerage, a duke owned a typical estate of some 100,000 acres, a marquis one of 50,000, an earl one of 30,000, and a viscount or baron one of 10,000.

REASON FOR LARGE ESTATES

These large estates were not economically profitable, as will be shown later. They had to be protected against dispersion by an elaborate system of laws (entails) and customs (family settlements). The motives which led to their establishment and maintenance were social and political. In industrial England of the nineteenth century, as in feudal England of the Middle Ages, the ownership of a considerable estate in land brought social prestige and political influence. Country gentlemen almost engrossed the House of Lords, and predominated in the House of Commons. In local government (before 1888) they were supreme. The squire of a parish was "invested with an authority over its inhabitants, which neither the Saxon chief, nor the Norman lord, in the fullness of his power, ever had the right of exercising." The English country house, so often described in novels of the period, had become an important institution, not only in society but even in politics.

If England had suffered in the past from the selfishness and the narrowness of the ruling class of country gentlemen, it had reason as time went on to recognize the importance of the service which they could render. In the difficult period of developing "big business" and world commerce, this leisure class furnished politi-

cal leaders ruled by ideals of public service, of absolute integrity, intelligent if not inspired, whom the rest of the world might well envy. They governed England in its prime, and if, as seems probable, their power passed with the first World War, not the least of the English problems is to provide worthy successors to them.

FARMERS

If the English landed system offered great political benefits, it involved difficulties in morals, sufficiently exploited in novels and society newspapers, and some distinct economic and social disadvantages. The proprietor of a large estate might himself superintend the cultivation of the "home farm," but necessarily had to leave the management of most of his property to others. Most of the agricultural area, perhaps five-sixths of the total, was rented to farmers, who supplied the capital (\$50 to \$100 an acre) needed for the intensive cultivation which returned wheat crops of 30 bushels an acre. The separation of ownership and management is in itself undesirable, and the evils inherent in such a system appeared to be intensified by the peculiar terms on which the farmers held the land. Few held long-term leases; most of them were tenants at will, subject to summary eviction without compensation for any permanent improvements which they had made. In theory such a system was thoroughly bad. In practice it worked tolerably well; most landlords exercised their power not only with justice but even with generous consideration. Their attitude alleviated to some extent another bad feature of the agricultural system, the existence of a large and depressed class of agricultural laborers.

LABORERS

The typical farm was of considerable size, 200 acres more or less, and for every 100 acres employed several men. In contrast with the few great landlords at the apex of the social pyramid was at the base a class of nearly a million who earned at best a bare subsistence. Many of them actually lived on less than was paid for the support of paupers. An investigation (1907) showed wages of 15 to 20s. a week, including all earnings and payments in kind. These were averages for different counties; in individual

cases the weekly earnings were 12s. (\$3) or even less. Asked how a family could be supported on such an income the answers were: "We don't live, we only linger"; "You can't call it living, it's a dragging of yourself along"; "I couldn't tell you how we do live; it's a mystery." Asked how a neighbor managed, the answer was, "Oh, she died!" Dwelling in old cottages, picturesque but unsanitary, eating the simplest fare, with meat, butter, or eggs coveted luxuries, unable to save and faced by the prospect of the poorhouse in old age, the class of agricultural laborers entered the twentieth century depressed under conditions which gave it but little share in the progress of civilization. An alleviation, at least, of its situation, was effected during and after the first World War by the action of wage boards, which raised wages some 20%.

DECLINE AFTER 1873

Even the upper classes in the agricultural organization suffered, after their kind, from an agricultural crisis which affected all western Europe when cheap grain from the United States, Russia, India, and other countries entered the market. The price of wheat fell below 30s. a quarter (say, \$1 a bushel), half what it had been, and with it declined the rent of landlords and the profits of farmers. The price of land, comparing records of sales, 1875 and 1900, declined a half. The Holkham estate of Lord Leicester, on which more than a million pounds had been spent, returned in 1891 a sum representing 2% on the improvements, nothing on the outlay for the purchase of the land. When the Duke of Bedford sold the Thorney estate of 20,000 acres in Cambridgeshire, in 1901, similar figures of yield were published. The golden days of the landed gentry had passed. Changes in the law weakened the restrictions of entail and settlement, by which the aristocracy had sought to keep land in the family, and sales of old family estates, which had been only occasional before 1914, became common after 1918. The journals read by the upper class were full of advertisements of fine old houses and landed properties now in the market. Land which had once returned a generous income had become a luxury too costly to be retained under the burden of income and inheritance taxes. The process of deflation was inevitably slow and painful.

Naturally it gave rise to a demand for agricultural protection, but a policy which would raise the price of food could not as yet be accepted by the mass of the English voters.

QUESTIONS

- How did the rate of growth of population in the nineteenth century compare with that of previous centuries? with King's forecasts? What questions did it raise?
- In what sense did the crisis of 1873 mark a turning point?
- What were the political conditions about 1800?
- What were the social conditions?
- What new tactics forced parliamentary reform in 1832?
- What other reforms followed?
- What was Burke's theory of labor?
- Illustrate the superiority of property to persons.
- Illustrate the persistence of old theories of the poor.
- Illustrate the character and importance of class distinctions.
- Describe and explain the condition of the hand loom weavers, of the frame work knitters. Were these conditions inevitable?
- What constitutes a labor class? How did the Industrial Revolution affect labor?
- What was the popular opinion of the factories?
- What was the physical condition of early factories?
- What were typical working hours?
- What were typical wages? Compare wages and family earnings with those of the preceding period.
- Illustrate conditions and contemporary views of child labor.
- Illustrate contemporary criticism of conditions.
- Do figures of earnings or food give a sure index of happiness? Illustrate conditions of life in towns.
- Distinguish the significance, in the history of labor organization, of the approximate dates 1700, 1800, 1825, 1875.
- Describe and explain the attitude of the government to labor about 1800.
- What was the character of trade unions after 1825?
- What features marked the act of 1875 as a turning point?
- Distinguish the significance of the factory acts of 1802, 1833, 1847, and 1878.
- What were the features of the act of 1802, and why was it not of practical importance?
- What was the course of agriculture to 1873?
- Illustrate the concentration of land ownership, and its connection with social rank.
- Explain the existence and persistence of the large estates.
- Under what conditions was agriculture operated?

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What were the conditions of the agricultural laborers?

What were the cause and results of the agricultural crisis after 1873, and the effects on large landed estates?

READING

The standard work on recent British economic history is J. H. Clapham, *Economic History of Modern Britain* (Cambridge, 1926-1938); the three volumes cover the period from 1820 to 1914. Among books offering briefer surveys, in addition to those already mentioned, are C. R. Fay, *Great Britain from Adam Smith to the Present Day*, (N. Y., 1928), and L. C. A. Knowles, *Industrial and Commercial Revolutions in Great Britain*, (N. Y., 1921).

Depression following Napoleonic wars. (Slater, chap. 1, pp. 1-20.)

The factory system. (Slater, chap. 2, pp. 49-59; Hutt in *Economica*, March, 1926, 16:78-93.)

Industrial development to 1879. (Slater, chaps. 10, 16, pp. 127-135, 191-200.)

Reforms to 1832. (Slater, chaps. 4-6, pp. 60-95.)

Reforms after 1832. (Slater, chaps. 7-8, pp. 96-118.)

Public health and municipal development. (Slater, chaps. 13, 18, pp. 160-173, 213-227.)

Public elementary education. (Slater, chap. 15, pp. 182-190.)

Development of transportation. (Clough and Cole, chap. 13, pp. 440-456; Birnie, chap. 3, pp. 34-50.)

Commerce and policy. (Slater, chap. 7, pp. 135-148; Clough and Cole, chap. 14, pp. 456-479; Birnie, chap. 5, pp. 65-81.)

The labor movement. (Birnie, chap. 9, pp. 140-159; Slater, chaps. 12, 17, pp. 149-159, 201-212.)

Labor legislation. (Heaton, chap. 28, pp. 685-706; Birnie, chap. 12, pp. 199-213; Slater, chap. 9, pp. 119-126.)

Labor in politics. (Birnie, chap. 8, pp. 126-139.)

English agriculture in the nineteenth century. (Clough and Cole, chap. 12, pp. 422-439; Heaton, chap. 18, pp. 433-444.)

Agriculture and capitalism. (Clough and Cole, chap. 17, pp. 561-584.)

The agricultural crisis. (*Edinburgh Review*, 1893, 177:216-246; *Quarterly Review*, 1893, 176:521-548; *Economic Journal*, 1893, 3:341-407, 570-583.)

CHAPTER X

English Trade and Manufacture, 1873-1914

FOREIGN TRADE

The revolution in industry, sketched in preceding chapters, was followed by a revolution in commerce. An accompanying chart gives a striking picture of the expansion of English foreign trade in the nineteenth century, particularly in its latter part when the application of steam to transportation on land and sea brought all parts of the world into economic propinquity. Measuring the trade by the unit of value, the pound sterling, it grew 12-fold in the course of the century, and if account be taken of change in the purchasing power of money the growth was actually some 24-fold! Although it is impossible in this book to treat in detail the history of commerce, it is obvious that a change of such sweeping magnitude must have been vitally connected with the development of the organization of production in England, and demands attention here.

In the two preceding centuries England had built up a world empire in which commerce followed the flag. It would be a mistake, however, to assume that the Industrial Revolution was a consequence of this imperial development or even of the commercial development which attended it. The application of power machinery to manufacture would have come to pass in England if America had never been discovered. When the new movement had once started, however, the startling increase in industrial efficiency demanded ever-growing markets for the product, and ever-increasing supplies of raw material for the producers. England specialized more and more as an industrial country, and staked its fortunes on a trade which spread to all parts of the world.

EXPORTS AND IMPORTS, 1800

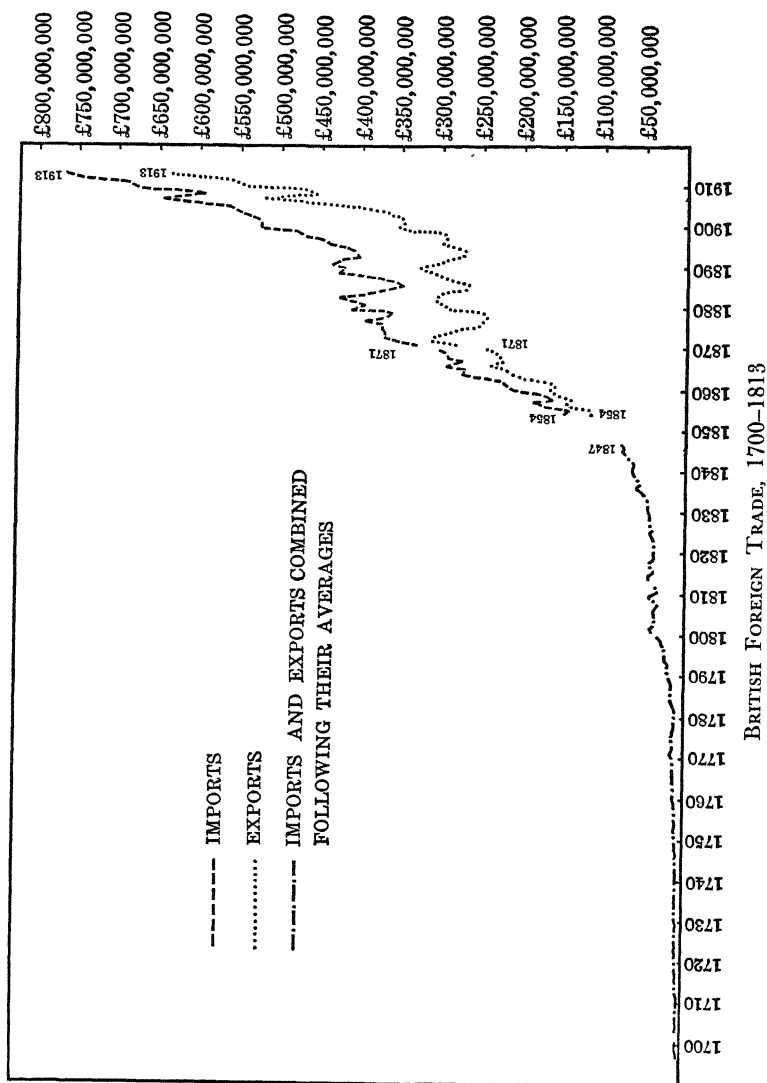
At the opening of the century England was already committed to an industrial career. The question of the union of Great

Britain and Ireland, just before 1800, led to a study of British trade relations, and provided the figures which are presented below. Stating all figures in millions of pounds sterling, the total exports of England (Great Britain) were 31. The old-established woollen industries contributed the largest item, 8.4; next came manufactures of cotton, 4.1, and of iron and steel, 2.1. Together these three branches of manufacture contributed nearly half of the total exports; the main lines of English industry and trade throughout the nineteenth century were already fixed. Other manufactures (haberdashery, 1.5; linens, 1.2; silks, 0.6; etc.) were of secondary importance. The raw materials which had been the staples of the English export trade in the Middle Ages, wool, lead, and tin, were now of small account, but one new item in this class appeared, which was destined to play a great part later, coal, 0.3.

On the other side of the balance sheet manufactures made up but a small part of the imports. If we exclude linens, 3.1, as the greater part of these (2.6) came from Ireland and would not later be counted in foreign trade, there was only one item of importance among articles manufactured for consumption, piece goods from India, 1.6; the English still got their finest fabrics from Indian looms. Dyestuffs, 1.0, bar iron, 0.9, and linen yarns, 0.9, were destined for further use in manufacture, as were the raw materials, cotton, 2.3, hemp, 1.0, silk, flax, and wool. By far the largest class in the imports, over three-fourths in value of the total of 42.6, was composed of articles of food and drink. "Groceries" (sugar, 7.1; tea, 3.1; coffee, 2.2) made up the largest item; then followed breadstuffs, 2.7; provisions (cured meat, etc.), 2.4; spirits and wine, 2.2; tobacco, 1.0.

COMMERCIAL POLICY

Through the first half of the century the government strove to maintain conditions substantially as they are presented in this balance sheet, restricting by a customs tariff the importation of foreign manufactures and of foodstuffs which could be produced at home. The repeal of the corn laws, in 1846, was a recognition of the fact that England could not hope to feed the increasing factory population with the products of its own agriculture; it marked a significant victory of the industrialists, led by Cobden



and Bright, against the landed gentry who sought to maintain their rents by keeping bread dear. Before and after the date 1846 the general tariff underwent revision, first in the way of amendment and then of repeal of the protective duties; after 1860 England had free trade. In this same period there was a general movement toward lower tariffs in other countries, and while this reform of commercial policy was not the sole cause it was one of the necessary conditions for the expansion of commerce pictured in the chart. England was without a rival, either in commerce or in manufacture. It supplied textiles and iron and steel to all the world. From 1855 to 1884 over 75% of its exports were manufactured wares.

Business all over the world had been stimulated by the gold discoveries about 1850, which initiated a period of inflation leading finally to the crisis of 1873 and the long period of depression following. England recovered from the depression to enjoy greater prosperity than ever, but to find as time went on that it had lost its monopoly of industrial efficiency and that rivals had emerged to menace its leadership. Toward 1900 symptoms of a change in the relative position and progress of England and other countries had become apparent. They will be considered here as an introduction to the discussion of English industrial development.

IMPORTANCE OF EXPORT TRADE

More than any other country England must be concerned in the fortunes of its export trade. Having specialized in manufacture and abandoned the attempt to produce at home the food needed to support the people, it must buy this food abroad in exchange for manufactured wares. Foreign markets had become a necessity of its existence. If other countries surpassed it in industrial efficiency, undersold it throughout the world, and so stopped the flow of its exports, many of the people must emigrate or starve. They had, in a sense, taken service with foreign employers, and if they no longer gave satisfaction and were dismissed, they had no one to look to for employment in England; the manufactured wares which they offered were far too great in quantity to be needed at home, while the food and raw materials which they required were lacking there. England had, it is true, resources beyond those embodied in the soil. It had investments in all parts of the world

and received for dividends and interest a steady flow of goods for which it need make no return; it enjoyed a handsome income for its services in banking and in the carrying trade. The items in its balance of indebtedness have been estimated as follows for sample years just before the first World War.

BALANCE OF PAYMENTS OF THE UNITED KINGDOM

(Figures in millions of pounds sterling)

	1907	1910	1913
Trade deficit			
Excess of imports over exports, merchandise and bullion	142	159	158
Invisible credits			
Shipping	85	90	94
Dividends and interest	160	187	210
Commissions and other	35	35	35
Total	280	312	339
Credit balance available for investment overseas	138	153	181
Overseas investment issues on London market	91	207	198

Such a showing appears to testify to the prosperity, even the affluence, of the country concerned. If the exports of native products were not enough to pay for the imports from abroad, the difference was made up partly by re-exports, partly by services rendered; the country scarcely needed to draw on its foreign debtors on investment account, and re-invested most of these returns, so making still stronger its position as a creditor country.

Nevertheless, the export of native products remained and must remain the mainstay of the English economic organization. The bulk of the people were engaged in their manufacture. They could sell some of their goods at home, but if they could not sell the large surplus abroad they must go begging. They could be supported for a time by the earnings and funded incomes of others, but not indefinitely, even by liquidating foreign investments.

SYMPTOMS OF CHANGE

The situation which caused uneasiness in the period before the first World War was not an actual decline in export trade. From 1872 to 1899, it is true, a period of falling prices, the exports of British produce were almost stationary in value, although they increased in bulk. From 1900 on they increased both in quantity

and value. But the rate of growth was not as rapid as that of some other countries, notably Germany and the United States. In outside markets, whether they were under a foreign or under the British flag, the English increased sales (exports) but not so rapidly as they increased their purchases (imports). The reader must guard against a misinterpretation of these facts, to which he might be led by the picture, purely theoretical and purposely extreme, of the preceding paragraph. So far as the facts indicated a decline of British commerce it was relative, not absolute, a decline from leadership, not a decline to destitution. The little islands which constituted the United Kingdom, with an area like that of a state of the United States (a little less than that of New Mexico), had accounted for nearly a quarter (in 1876 about 23%) of the trade of the world; they still accounted in 1913 for 15% of the total, and actually 40% of the seaborne trade of the world. A position of such eminence could not conceivably be maintained as other countries with larger areas grew in population and developed fresh resources. To some extent the setback of English progress could be attributed to the development of protective tariffs in other countries, bearing heavily on the manufactures which formed the bulk of the English exports. Yet the English had reason to feel concern when they found that in neutral markets and even in British colonies where they enjoyed special advantages their competitors were getting a larger share of the trade than they, and that this shift to their disadvantage must be explained not by the number but by the increasing efficiency of their competitors.

RANK OF EXPORT INDUSTRIES

There were symptoms of a change not only in the quantity but also in the quality of the export trade. At the end of the century it still consisted mainly of manufactures, with the textiles and iron and steel furnishing the largest part of the whole; but raw products, such as coal and potter's clay, were taking a place of growing importance. Ship owners who had brought raw materials to England and had as a return freight manufactures of less bulk were glad to take those products at a low rate, but their export meant to the British manufacturer the sharing of his advantages with a competitor. Among the industries those, which

had grown up so rapidly during the Industrial Revolution were still the leaders, contributing two-thirds of the exports of wares partly or wholly manufactured, in the following proportions (percentages for the whole period, 1880 to 1910):

Manufacture of cotton	34.1%
Manufacture of iron and steel	12.7
Manufacture of wool	11.6
Machinery	7.9
Total	<u>66.3%</u>

CHANGES IN RANK

The fortunes of these industries will be the subject of discussion through the remainder of the chapter. For reasons which must be considered they were not maintaining the victorious progress which marked their development in the earlier part of the century, and their failure to advance was the main reason for the check to British trade. Minor industries which did increase their contributions to exports in this period were of a sort not welcome, because they employed cheap unskilled labor, and reflected little credit on the organization; such were the industries producing ready-made clothes, preserves, soap, furniture, cordage, etc. England appeared to be undergoing a transformation in which the industries on which the country had prided itself and by which it had won the markets of the world were losing ground to industries of a lower sort, serving the consumer with manual labor. An analysis of occupations, comparing 1881 and 1901, and comparing the number actually engaged in an occupation in 1901 with the number which would have been predicted to accord with the growth of population, gave the following results for England and Wales. (Figures represent thousands. The table is to be read as follows: *If the same proportionate distribution in occupations had obtained in 1901 as held in 1881, there would have been 511,000 more in agriculture, 169,000 less in coal mining, etc.*)

<i>Declining Occupations</i>		<i>Growing Occupations</i>	
Agriculture	511	Coal mining	169
Cotton industry	107	Building trades	88
Woolen industries	64	Tailoring	58
Silk industry	42	Printing and bookbinding	40
Iron and steel industry	35	Furniture industry	17

Of the occupations on the left of the table, those which were not keeping pace with the growth of population, agriculture was the most marked; England was becoming ever more dependent on food supplies from abroad. The branches of manufacture whose growth had been checked were the very ones on which England had relied in the past for the purchase of its food. The occupations on the other side of the table, growing more rapidly, were not those which the country would have liked to foster. Coal mining was an industry, carried on mainly by manual labor, which put into the hands of competitors a precious source of energy for transportation and manufacture. The building trades, serving the local consumer, were protected by their nature from foreign competition, and again were manual in character; their disproportionate growth was certainly no evidence of strength. The three manufactures listed were obviously not of a kind to be welcomed in a country which had won its place by the mechanical production of wares for the world market. Conditions in English industry were unusually depressed in the year 1901, and a comparison closing in 1911 would make a more favorable showing, but still not satisfactory to anyone anxious for proof that England was maintaining its position of industrial leadership.

COTTON

The cotton industry, in which the possibilities of the Industrial Revolution had first demonstrated themselves, had become and still remained the mainstay of the English economic organization. The number employed in it was double that engaged in any other branch of manufacture, and the industry had a peculiar importance in that it produced mainly for the foreign market and so afforded means to buy food and raw materials from abroad. Of the total output eight- or nine-tenths (as measured by value or by bulk) were sold to foreigners. Cotton in the form of yarn or of finished goods contributed about one-quarter of the total exports. Measuring by millions of yards, the exports of piece goods in 1870 exceeded 3,000, and after 1900 were over 6,000; England provided every year over 3 yards of cotton cloth for every inhabitant of the globe. English spindles supplied nearly half (in value) of the cotton yarn which entered into international trade, and English looms much more than half of the cotton cloth.

ORGANIZATION

The condition was all the more extraordinary in that the English cotton industry, the greatest national export industry of the world, was concentrated in an area only 25 or 30 miles square in southern Lancashire, an area roughly comparable to that of the state of Rhode Island. This region offered the advantages of cheap coal, ready access to ocean shipping, and a damp climate. When cotton is spun in dry air the fibers tend to fly apart instead of clinging together, the strength of the yarn is reduced, and it is apt to break under the strain of drawing and twisting. For the spinning of fine yarns dampness is essential, and the artificial humidifiers used in some countries to overcome the difficulty are an unsatisfactory substitute for the conditions provided by nature in Lancashire. Even more important were the assets derived from the long establishment of the industry there. For generations the people had done nothing but work cotton, talk cotton, breathe cotton; it was in the air. The result was a store of experience and a provision of skill and equipment for every branch of the industry. The combination of the world-wide market and the sharp local concentration of producers had stimulated an extraordinary specialization of function not matched in any other industry. Special classes of merchants devoted themselves to the purchase of the raw material and to the marketing of the finished or semi-finished goods. Not only was spinning an industry in itself, separate from other branches; different towns specialized in the production of different counts of yarn.* Bolton and Manchester produced the finer yarns, such as were needed for the manufacture of sewing thread, making counts from 60's to 300's; Oldham, a single town containing more spindles than in all of Germany or all of France, produced low and medium counts for weaving ordinary piece goods. Inside a town there would be still further specialization; a single large mill in Bolton or Oldham would confine itself to one or at most a few counts. In the next great branch of the industry, weaving, for which the yarn was raw material, there was a similar localization, although of course specialization could not proceed so far except in the case of some

* The count of yarn indicates the number of hanks, 840 yards long, to a pound, a count of 300 indicates about 140 *miles* of yarn to a pound.

recognized staples. The combination of the two processes, spinning and weaving, in one factory was exceptional, as it was also for a manufacturer to attend to the finishing of the cloth and its sale in foreign markets. The manufacturer would commonly sell the cloth to a shipping merchant, intimately acquainted with the market in some particular part of the world (Africa, India, Far East, South America, etc.), who would have the cloth finished (bleached, dyed, printed) to meet the needs of his customers, in establishments devoted to this branch of the business; this shipping merchant relieved the manufacturer of the credit risks involved and of the problems of packing and shipping.

COMPETITION

This bare sketch of the organization of the English cotton industry omits countless details, but will indicate its elaborate complexity, and may suggest why the industry functioned so efficiently before the first World War, and why the dislocation of the world's trade which ensued affected it so severely. Even before 1914 the English had begun to feel the competition of other countries. In spinning fine yarns they were still supreme. These yarns must be spun on the mule, which makes separate operations of spinning and winding, so losing time and reducing output, but which yields a product more fine, even, and soft than other methods. The mule is tended commonly by male labor and requires adept service; it is said that only a boy who has grown up in a mill can become a good mule spinner. Coarser yarns were produced more rapidly on the ring spindle, which could be tended by women of a lower grade of skill. It was characteristic that in England (1909) $\frac{5}{6}$ of the spindles were mule spindles, in the United States $\frac{5}{6}$ were ring spindles; the old country tended to specialize in quality, the new country in quantity. The same contrast appeared in the manufacture of cloth from the yarn; the United States could manufacture drills and sheetings and could export them to a neutral market, such as China, in competition with England, but in spite of a protective tariff it had still to import the finer fabrics from the old country. The power loom had been greatly improved since its original application, particularly in devices to stop the machine if a thread broke and threatened to spoil the work, and later in devices to avoid stoppages. In the Northrop loom, in-

vented in England but taken up, developed, and introduced in manufacture in the United States, automatic devices provided for many needs, including threading the shuttle and replenishing it with yarn, instead of stopping the loom every few minutes to perform this operation. This represented not only a saving in time and in wear and tear, and an advantage in the maintenance of the proper adjustment; its great economy lay in the fact that it enabled the weaver to oversee many more looms. In England a weaver seldom tended over 4 plain looms; in the United States he might tend 20 or even 30 automatics. The Northrop loom made slow progress in England, partly because it was not so well suited to mule-spun yarn, partly because it was not adapted to the finer grades of work, and offered no great advantage when applied to the production of a variety of small orders, partly because the English weavers were strongly opposed to its introduction. Brief attention must be given later to the labor question in the English cotton industry.

MARKETS

As countries like the United States and Germany grew to industrial maturity they tended to protect their markets in favor of home products, and the English cotton industry was forced to seek outlets elsewhere. Its strength in the spinning branch enabled it to sell still a large proportion of its yarns in Europe, but it found the great markets for its finished cloth, piece goods, in British India and the Far East. Of 6 milliards (thousand millions) of yards exported, on the average of the years 1905-09, British India took 2.4 and China, Japan, Java, etc., took 1, in round numbers. It was therefore with great concern that the English observed the development in those countries of a native manufacture, equipped with English machinery and often financed with English capital. The natives were incomparably inferior to the English as factory workers. In Japan, for example, four-fifths of the operatives were girls between the ages of 13 and 20, many from the country districts with no familiarity with machinery and no sense of organization; they needed at least 3 months' training to acquire average proficiency, and commonly left the factory to be married at the end of a year or two. They worked long hours for low wages; in Japanese spinning mills the average daily wage in 1904 was

\$0.17 for males, \$0.10 for females. At this date in England spinners got about 6s., say \$1.50, a day. The difference seems tremendous. Yet in the past England had faced a spread in wages approximately as great, and yet had undersold Eastern rivals in their own markets. The Manchester Chamber of Commerce had found, 1888, that Lancashire could pay operatives 5 to 10 or even 15 times the wage received by the Oriental for a much shorter working day and still could produce yarn at a lower labor cost. The number of operatives required to manage a given amount of machinery was 5 to 8 times that needed in England, and even this larger number could not turn out as much good work as the English. This was, for the Asiatic factories, the awkward period of infancy. Little by little they closed the gap between them and their English models. In 1904 the best of them needed only 3 times the English working force. Up to the first World War, as shown by the figures of exports quoted above, England still had an immensely important market for its piece goods in the East. But it had seen its exports of yarns to India decline, and exports to the Far East dwindle to almost nothing, as spindles in the eastern countries were put in operation; and it was faced by a growth in the number of looms in the East which menaced it with a similar result in its trade in finished cloth.

INFLEXIBILITY

In the cotton industry, as in others to be considered, England had to pay the penalties, as it had long enjoyed the advantages, of leadership. The period of its industrial supremacy had, almost inevitably, established certain patterns of behavior, fixed certain habits and institutions, which served well in their time, but which became very resistant to change. When other countries had learned all that the English could teach, and, with the flexibility of youth, had experimented and improved upon the models of their teachers, the English found it very hard to adopt the innovations. They were not stupid; to a large extent their hands were tied. The matter can be illustrated by the history of labor in the cotton industry. In that industry was first developed the ideal type of modern factory labor, adept, ambitious, efficient. Laborers of this class developed the modern trade union, an extraordinary achievement. The unions in the cotton industry were unusually

well led and progressive; they appeared sometimes more insistent on efficiency than were the manufacturers themselves. They promised to give the industry that stability of economic relations so much needed in a period of competition, and so hard to attain. But they approached this end by developing elaborate rate agreements, "standard lists," which became something like a written constitution for the industry, and with their stipulations regarding the piece wage for different kinds of work they mixed other restrictions, designed to protect the members of their class from exploitation. Good or bad, the standard lists and the other regulations became rigid; if they prevented evils, they certainly hampered progress. An English student of the industry, traveling in America, found the mill labor in Fall River inefficient and overpaid compared with that in Lancashire, working no harder but actually turning out more product because of the organization and equipment provided by the management. Another English student noted that in Lowell one man would tend 6 warping machines, with the assistance of 3 girls, unskilled labor, for the less difficult parts of the process; "an American mill man," he wrote, "untrammelled by standard lists, finds it hard to believe that the English warper runs only one machine." He thought it would be interesting to try in England the American system of reserving the skilled hands for skilled work, "if standard lists could be adjusted and unions would not block the way." In 1903 a group of English cotton manufacturers made a tour of the United States to learn what they could of possible improvements, and after their return they made efforts to apply American methods in their mills. An attempt in one mill to restrict weavers to their special work, supplying helpers to perform the less important duties, was met by a strike; the weavers asserted that they got a restful change by stopping their work to clean and oil the looms, or to carry finished goods to the warehouse. Down to 1914 the trade unions still opposed the introduction of the Northrop loom.

WOOL MANUFACTURE

It will be convenient to consider next the fortunes of another textile industry, manufacturing wool, although in its contribution to the export trade it was now outranked not only by cotton

but also by iron and steel. In contrast to the cotton fiber, the hair of sheep and of other animals often combined with it in manufacture presents great variations, not only in dimensions but also in other qualities, such as elasticity and tendency to curl. Furthermore, wool being provided with little scales or serrations has the peculiar property of felting; the scales of the hairs interlock when they are pressed together. A single fleece may provide ten different qualities of wool, and the fleece is very different according to whether it is taken from a pure-bred merino, from an English breed, or from a cross-breed combining some of the characteristics of each.

These individual characteristics of the wool fiber resist so purely mechanical a treatment in manufacture as that to which the cotton fiber submits. They lead to a division of the industry into two distinct parts, making respectively woolens, in which the yarn contains many short wavy fibers, and worsteds, in which the fibers are kept as closely parallel as possible. It is not practicable here to follow this distinction, and the woollen industries will be treated as one. But the characteristics of wool play a part in affecting the geographical distribution of the industry and international competition in its products which must be noted here. The raw material is not localized but is as widespread as the sheep. The manufacture up to a certain degree of efficiency is easier to establish just because it is less suited to elaborate mechanization. On the other hand, the highest efficiency in manufacture can be attained only when the best mechanical equipment is combined with an intimate knowledge of the qualities of the innumerable varieties of wool, and of the details of processes suited to make the best of them.

ADVANTAGES OF ENGLAND

England had had the experience of centuries in the woollen industries even before the Industrial Revolution. They were regarded as the mainstay of the country's prosperity, furnishing the larger part of the exports and representing the largest manufacture for export of any country in the world of the time. The introduction of power-driven machinery came much later than in cotton, partly because of the technical difficulties indicated above, partly because the woollen industries were so firmly established in

traditional lines. But at least this change antedated that in other countries; throughout the nineteenth century England was supreme in the mechanical equipment of its woolen industries, and made most of the machinery which was set up in other countries as modern methods of manufacture spread to them. The expansion of trade about the middle of the century offered a broad market to English products, and the flow of trade to England from all parts of the world built up there a wool market in which all known varieties of the raw material could be obtained. Freedom of restrictions on imports, such as some other countries maintained to protect the sheep-breeding industry, gave the manufacturer full advantage of the opportunity to combine his materials in just the proportions which offered the best results. An American observer was shown in an English factory a blend of 14 distinct varieties of wool, from which a simple woolen fabric was to be made; an American manufacturer, hampered by the tariff of the time, would have restricted himself to 2 or 3. For certain purposes and within certain limits the use of re-worked wool (shoddy or mungo) is legitimate, and from the standpoint of price desirable. It is characteristic that another American observer, on the northwest frontier of India near the Khyber Pass, found second-hand clothes from London being sold to the native Afghans, to be shipped back later as rags to feed the English shoddy manufacture.

DEVELOPMENT BASED ON HOME MARKET

The numbers occupied in the woolen industries in England varied little from 1851 to 1911. This does not prove, however, that the industries were stagnant. At the earlier date many workers were still employed in domestic work, particularly as hand loom weavers; in the course of time these or their successors were absorbed in factories where their work was much more effective. Between those same dates the number of spindles and of looms in factories increased about three-fold, and the consumption of wool grew at a corresponding rate. Most of the increased product, however, was taken by purchasers in the home market. As regards exports, there were shifts in the amounts of particular classes of goods sent abroad, but the total volume remained stationary or declined. With the growth of other

branches of trade the importance of the industry in the export trade diminished, and on the average of the five years preceding 1914 it contributed but 9 or 10% to the total of manufactures exported. If the English industry in this period did not expand its foreign market, it had, in this instance at least, the satisfaction of knowing that its chief rivals were faring no better. The exports of wool textiles from Germany likewise continued nearly stationary, those from France showed a marked decline; exports from the United States were always inconsiderable. The world's demand for the products of the woolen industries increased with the growth of population, but was met in the main by production in the separate countries, as in the United States, under the protection of a tariff. The consumers of woollens and worsted, unlike many of the consumers of cottons, lived in temperate countries, in which industrial civilization had so far advanced that the establishment of an independent manufacture, generally with English machinery, was practicable.

ORGANIZATION AND EFFICIENCY

The products of the woolen industries could not be standardized like some cotton products, and although the worsted manufacture approached the cotton manufacture in elaborateness of organization, it was common in the woolen branch for a single firm to carry on all the processes from the preparation of the raw material to the weaving and frequently the dyeing and finishing of the cloth. The characteristics both of the raw material and of the finished goods, which varied greatly in weight, weave, and pattern and were subject to all the changes of fashion, as they were used largely for outer wear, put a premium on the personal element in manufacture, and made the ideals of scientific management hard to realize. If it is not true, as has been said, that the manufacture of wool "requires more brains than other industries" it seems certain that it is more of an art than most of them. Though machinery has been developed for most of the processes of manufacture, it is not by itself alone a substitute for the skilled operative whose personal touch under competent direction gives results which a mere machine cannot attain. American woolen manufacturers, using English machinery and even English operatives, could not give their products, it is said, the

finish and feel of Bradford woolens; they did not observe the nice details which were necessary for the finest work.

LABOR

The English woolen industries had in their working force, trained for generations in the business, an asset which gave them an assured position so long as other countries would receive their products on equal terms, and which kept a market open to their finest products in spite of any tariff. Like other representatives of the English labor class the workers in the wool industries were not versatile, not readily amenable to change. "One of the greatest difficulties we have to contend with," wrote an English manufacturer, "is that the old-fashioned workman has not had the benefit of a really improved education, so that whilst he is an excellent workman as long as he has to do exactly what he has always had to do, the moment you ask him to do something new, he is perfectly helpless; he cannot understand that the demand has changed, and that other things have changed, and that which was perfectly right ten years ago may not be right now." This complaint, as will be shown, was by no means confined to the wool industries. England was an old country in manufacture, and could not hope to retain the flexibility of youth. In the wool industries, at any rate, this defect of labor was more than offset by very real merits, and was not intensified to any serious extent by restrictions of trade unions.

IRON AND STEEL

Iron, which furnished, in Jevon's phrase, the fulcrum and the lever of modern mechanical civilization, had been made by the Industrial Revolution an indispensable factor in progress. The iron production of the world, less than 1 million tons in 1800, had grown to nearly 2 in 1830, to nearly 5 in 1850, to nearly 12 in 1870. In this increase England, using the new methods applied in the Industrial Revolution and the abundant domestic supplies of coal and ore, had taken a leading part; it was really without a rival, producing at the last date as much as all the other countries of the world together. Its leadership seemed to be confirmed by Bessemer's discovery, patented in 1855, of a process which reduced many-fold the cost of converting iron into steel. The superiority

of steel to cast iron in tensile strength and toughness opened an ever-widening field to its use, and as improved processes were perfected steel took more and more the place formerly taken by iron. The course of development at the close of the century can be traced in the figures of the accompanying table, giving annual average figures of production for the world as a whole and for the leading countries. Two facts stand out prominently: the ever-increasing demand for iron and steel by the world at large, the ever-shrinking proportion of the supply contributed by England.

PRODUCTION OF PIG IRON AND STEEL

(Millions of Long Tons)

<i>Period</i>	<i>Iron</i>				<i>Steel</i>			
	United Kingdom	Germany	United States	World	United Kingdom	Germany	United States	World
1870-74	6	2	2	13	0.5	0.2	0.1	1
1880-84	8	3	4	20	1.8	1.0	1.6	5
1890-94	7	4	8	26	3	3	4	13
1900-04	9	8	16	43	5	7	13	33
1910-13	10	15	28	69	7	15	28	66

RELATIVE DECLINE OF EXPORTS

Obviously other countries were ceasing to rely upon England as their source of supply of iron and steel, and were themselves developing the production of those metals; England fell to the second and then to the third place, measured by aggregate output. Far more serious was the fact that other countries not only were supplying their own needs, but furthermore were learning such efficiency that they could export to neutral markets in competition with the English and were threatening a branch of English export industry which was second in importance only to the cotton manufacture. About 1880 England sold abroad nearly twice as much iron and steel (measured by value) as France, Germany, and the United States combined. Comparing conditions in 1880 and in 1900, English exports were subject to fluctuations and in some lines to setbacks which restricted their growth to small dimensions, while German exports doubled and exports from the United States grew ten-fold. In 1900 England was still leading, but with an export trade equal to that of the other three countries, not double it. In 1912-13 Germany took the lead, and the exports of iron and steel from the United States were growing so rapidly that this country threatened to reduce England to third place.

The development of the iron and steel industries in other countries had been furthered by protective tariffs, and testified in that fact to the superiority of the English industry. Even the export trade of those countries had in some measure obtained advantage from protection; assured of the home market the German or American manufacturer could afford on occasion to dump his surplus product abroad at a price which the English manufacturer could not meet. The grievance was a real one, and fostered in England from about 1900 a growing demand for a tariff to be used for protection and reprisal. The protectionist movement, however, made little headway among the mass of the people, who had become prosperous in a period of free trade and held to that policy as obstinately as, for a similar reason, many people in the United States held to a policy of protection.

ORE SUPPLIES

An apparent disadvantage of the English in this later period of international competition was the fact that the ore supplies at home, which had formerly provided abundant raw material, were deficient in quantity or in quality for use in some of the new processes of production, and the country was forced after 1900 to import a third or more of the ore which it consumed. Actually, however, the cost of transportation from Spain or Sweden was not far from that of transporting ore from Lake Superior to Pittsburgh, and the English industry was not in this respect at such a disadvantage as it was in the somewhat higher cost of coal, compared with American prices. English coal mines were in general deeper than the American and in some other physical features were not adapted to the most economical methods of production.

ORGANIZATION SET IN OLD FORMS

Both political and physical factors played a part, unquestionably, in restricting the development of the English export of iron and steel, in competition with the products of other countries. At one time or another, with regard to one ware or another, these factors were felt to be serious handicaps. But all the time an economic factor was at work, which was of far greater importance. The English were being surpassed by other peoples in efficiency of production. They were paying again the penalty of

success. Their industry had grown great in the period of their leadership, but it had also grown old, and had become more or less set in traditional lines. The rapid growth of the industry in Germany and the United States was not necessarily a proof of the superiority of these countries, for it was furthered by protection, but the rapid growth in itself contributed to superiority. It required new machinery, it encouraged new methods, it made possible forward-looking plans which could be executed as a whole, not piecemeal over a period of years. The English were conservative because they had so much to conserve; the others were radical because their roots had not yet struck deep.

WASTES

The English industry had grown up in a period when relatively small and scattered establishments were the rule. Coal was coked at the mine, to save costs of transportation, in beehive ovens which allowed the gases to escape. Blast furnaces, steel plants, and rolling mills had been established without much relation to the source of coke or to each other. There was a serious waste of by-products and of energy. The best modern practice required the use of by-product ovens for making the coke, and the use of the gas from these ovens to make steel on the open hearth. The coke, in smelting the ore into pig for making steel, gives off surplus gases which can be recovered and used in an internal-combustion engine for power to roll the steel. Finally, from the time the liquid iron is smelted from the ore until it is rolled out in finished steel shapes, the metal should not be allowed to cool; heat is precious and must not be wasted. Obviously the local combination of all these elements in the process must be most carefully studied to obtain the maximum efficiency, and this was done when the great steel mills were built in Germany and in the United States. But at that time the capital invested in the English industry had already taken definite shape, and any approach to the new ideals could be only partial and gradual.

EQUIPMENT

Not only were the works scattered in England, they were equipped with furnaces, converters, and machinery of an old

model, often too small in capacity for the most efficient operation. Lady Bell, wife of a prominent English ironmaster, wrote (1907) : "Part of the absorbing interest of watching the manufacture of iron is that, in this country at any rate, it is all done by human hands and not by machinery. From the moment when the iron-stone [ore] is lifted off the trucks, then dropped into the kilns, afterwards taken to the furnace, and then drawn out of it, it has not been handled by any other means than the arms of powerful men, whose strength and vigilance are constantly strained almost to breaking-point." When a furnace was to be tapped, three or four men with a great iron bar and with sledge hammers broke through the plug of clay in the vent, while a crowd of men stood about to help in casting the pigs. When sufficient iron had run off and the vent was to be closed again, a man hurled balls of clay at the opening, "the throw being instantly followed by a mighty thrust from a huge bar of iron, wielded by five men, who stand ready as each lump is thrown in to push it home. . . . Sometimes the closing of the aperture is effected in three minutes; sometimes, not often, it has taken nearly as long as an hour." Years before the time when this was written a steam gun had been introduced in America to accomplish the result more surely and at lower cost. An English trade unionist, representing the iron and steel workers, who visited the United States in 1902 found the output of American steel mills almost incredible; all English visitors were impressed by the extensive use of machinery and the relatively small force of labor. A mill would roll 3,000 tons of rails a day with less than a dozen men on the floor. At the Homestead Mills 3 men with special electrical apparatus charged 20 furnaces, a task which previously would have required the labor of over 200. The charging machine had become practically universal in open hearth furnaces of the United States about 1900. It would pick up a box containing the ingredients of the steel, thrust it into the furnaces, empty it and withdraw it, at a great saving of time and of heat as well as of labor. An English manufacturer thought of introducing these machines for his furnaces, and sounded his workers on the proposal. "They would not allow any work-people to be knocked off, and they insisted that they were to get the same as before. No doubt, if we had put them in it would have been a question of time, and we should

have been able to knock off some of the under hands, but the smelters we might have a difficulty with. They are a union, and one of the strongest in this country, and very difficult to attack." The manufacturer abandoned the plan and continued in the old way.

COMPARISON WITH AMERICAN INDUSTRY

A comparison of statistics (1907-09) showed that in the United States the output of pig iron per worker was more than double the English (84.5 tons against 39), the output of steel was triple (77 against 25). The American iron manufacture produced a ton of pig from less raw material (1.96 tons of ore and limestone against 2.48; 1.74 tons of coal against 2.09). On the other hand, the Americans were lavish in the use of mechanical energy; the horse power per worker in the steel industry was $10\frac{3}{4}$ against the English figure of $5\frac{1}{4}$. About 1900 the Americans were actually invading the English home market, selling rails, fish plates, plates and angles for ship building below the English prices, and winning contracts for bridges and other structural work against English competition in British dependencies (Egypt, Uganda, Burma) and in the neutral markets of South America. Their superiority showed itself not only in a lower price but also in more prompt deliveries and in more advanced methods of construction which enabled them sometimes to get a higher price per ton for their steel while the consumer paid less in the aggregate, because a smaller tonnage gave the service demanded. The English in this period began to consider "Americanizing" their industry, sent representatives to the United States to study new methods, and imported American foremen and technical experts.

MACHINERY

Of the major export items listed in the early part of this chapter and comprising all together nearly two-thirds of the total, 1880-1910, the fourth and last, machinery, is still to be considered. Obviously this item has a significance, in an age of mechanism, beyond the measure of money value; it is in some sense an index of the aptitude of a people for leadership. Particular importance, therefore, attaches to the figures of the accompanying table, which give the value (annual averages in millions of pounds sterling)

of the machinery exported from England and from other countries in the period before the first World War.

<i>Period</i>	<i>United Kingdom</i>	<i>France</i>	<i>Germany</i>	<i>United States</i>
1880-84	12	1	3	3
1890-94	15	2	3	4
1900-04	20	2	10	15
1909-13	32	4	29	28

The figures show a general tendency similar to that which has been considered in the industry producing iron and steel in crude forms, but not quite so marked in some respects. About 1880 England was practically without a rival in the manufacture of machinery. It continued to advance, and down to the end of the period still held the lead over any single country. Its rate of advance, however, was much less than that of some other countries. Germany and the United States had become formidable competitors in the world's markets, and obviously threatened to reduce England in rank as they had done in the export of iron and steel. The matter was of importance because the English industry looked to the export trade for the sale of about half of its output.

The figures include a great variety of wares: cutlery and guns, tools and machine tools, engines, automobiles, electrical and textile machinery, and so forth. Different wares met the new conditions of competition with various degrees of success, and it is not possible here to do more than to suggest some of the reasons why England lost ground, at least relatively, in some of the branches of industry concerned.

SMALL INDUSTRIES

In some industries the manufacture was still in a backward stage of organization, depending mainly on manual labor and skill, often conducted in small shops with primitive mechanical equipment. This was notably true of cutlery, which was still largely in the stage of the handicraft or of the merchant employer. The average number of adults working in a shop (1901) was six. The cutlers of Sheffield still drilled by hand (1913) with a primitive boring stick or bow and piercer. One of these cutlers working with a fourteen-year-old son made 56 dozen pocket knives in a week, working fully 70 hours, sometimes 16 hours a day; the two cleared 18s. 4d. (about \$4.50) for a week's work. Americans with

a much higher wage scale could not possibly compete with this labor in making articles by hand. But when they could not develop machinery to produce the ware, they could sometimes modify the ware to suit the machine, so making table knives of one forging, electroplated, instead of assembling them from parts, and producing in the safety razor an implement which required practically no hand forging or grinding. The manufacture of fire arms was another trade in which the English still depended largely on manual skill. An English sporting piece was a work of art, without question the best of its kind, but it was expensive. The Americans and later the Belgians introduced automatic machinery for the manufacture of fire arms in large quantities, and robbed England of the market which it had formerly had in other countries. The manufacture of locks is another example of an industry which was still carried on in small shops, and which could not compete with more advanced methods of production. The file cutters of Sheffield objected to the introduction of American machines for doing work which they had been used to do by hand, even though their wages were raised as a result; they said "it was not right to turn the stuff out so fast." Machines were gradually introduced, but even in 1928 some of the work was still being done by home workers.

EQUIPMENT

Far more extensive and far more significant were the industries which had reached the factory stage of production, but found themselves in this period of competition surpassed by younger rivals. The English industries again found themselves handicapped by their long and gradual development; they carried much of the past into their present. "Old works have been added to, fresh machinery has been introduced from time to time to balance up old machinery. There has been generally an absence of totally new works with an economic layout. Whilst the country can point to many works of the highest class, with the most modern equipment worked at the highest efficiency, there can be no doubt that many of our older works are manufacturing at costs which could be greatly reduced if their works as a whole were on a larger scale, well-planned and equipped with plant, and therefore capable of being worked in the most efficient and eco-

nomical manner.” * An American engineer found in 1914 a factory shut down because of a failure in the power plant. The engine was over 50 years old, and the superintendent said it was hard to keep it in repair. Another American, writing in 1912, said that “some few years ago” he had seen in England a single cylinder walking beam engine being built alongside triple expansion engines of modern type, he was told that the owner of an Oldham cotton mill, by whom it had been ordered, wanted an engine like his father’s. One can scarcely believe the statement in an American engineering journal that a walking beam engine with the original oak beam served a Birmingham factory for 135 years, down to 1902; the date ascribed to its erection, 1767, was before Watt’s patent of 1769. But Watt’s biographer is authority for the statement that an engine built by Boulton and Watt in 1776 for a pumping station of the Birmingham Canal Navigation Company was still in regular operation down to 1893.

TRADE UNIONS

“The tender and pathetic attachment of the old-fashioned manufacturer to his equally old-fashioned machinery,” as an English author described it, was based on something besides sentiment. Trade unions were strong in the machine industry, “the engineering trades” as they are termed in England. They held in general to the theory of the “lump of labor,” that there was a certain amount of work to be done and that the interests of the workers were hurt by the introduction of labor-saving machinery. At a time when automatic machinery was being developed in other countries, particularly in the United States, to the point of enabling one worker to tend 2, 3, 4, even a dozen or more machines, the English workmen held covertly if not openly to the principle “one man, one machine,” and were determined that at least if a machine was introduced to do the work of a skilled man it should be tended by a man of equal skill and pay. Nothing impressed English visitors to American machine shops so much as the relatively small amount of manual work which was done. The hand hammering, the filing and fitting, which were a normal part of the process at home, were conspicuous by their absence. The

* Report of the Board of Trade Engineering Trades Committee of 1916-17.

American manufacturer would not tolerate machine tools and workmen which would not turn out parts that could be rapidly assembled by workers of a modest degree of skill. Gradually and against opposition, machinery of a modern type made its way into the English industry, but the very threat of a conflict with labor greatly delayed its progress. Complaints of manufacturers, set forth in detail in the Report of the (Chamberlain) Tariff Commission, 1909, must always be regarded with some skepticism, but in this matter they are amply confirmed by other evidence. The English metal-working and machine-building industry was hampered in its competition with Germany and the United States by the attitude of labor.

LEADERSHIP

Nevertheless the manufacturers must bear a considerable part of the responsibility for failure to keep pace with competitors. Like their workmen they too were bound by traditions of the past, and were timid in adapting themselves to new conditions. Their attitude is illustrated by the statement of one of them before the Tariff Commission (1904): "With a protected market we should equip our factories and bring them up to date. We want some definite security that the outlay will be remunerative." Every business man yearns for this "definite security." In an era of competition none attains it. If one man does not make progress, he knows that another will. The best that he can do is to study all possible improvements, choose the most promising, and then take the risks to which he is committed. The process is never ending. Respects in which manufacturers were deficient will be further considered in the next chapter.

QUESTIONS

Compare the amount and rate of growth of English trade in 50-year periods, 1700-1750-1800-1850-1900.

What does the chart suggest as to the relations of the revolutions in industry and in commerce?

What were the major exports of England about 1800?

What were the major imports?

What was the course of commercial policy?

Explain the peculiar importance to England of the export trade.

What were the important credit items in the international balance before 1914?

- What were the indications of change after 1870 with respect to competitors, and with respect to markets?
- What were the explanations of the change?
- What were the major export industries?
- What changes were indicated in the relative rank of industries?
- Illustrate the importance of cotton manufacture.
- Why was the manufacture so sharply localized? What were peculiarities of its organization?
- Distinguish the lines of manufacture in spinning and weaving in which England was and was not superior. Why was not the automatic loom more generally used?
- What were the most important markets for yarn and cloth? What were the conditions of manufacture in Asiatic factories?
- Illustrate and explain the inflexibility of the English cotton manufacture. Compare American conditions.
- Contrast the fibers of cotton and of wool, and the conditions of manufacture resulting.
- What advantages did the English enjoy in the manufacture of wool?
- What was the course of the woolen industries in this period?
- Illustrate the importance of the personal element in the woolen industries.
- What was the course of the iron and steel industry? What was the course of the export trade?
- What political and what physical factors obstructed development?
- How was English industry injured by its age?
- Illustrate wastes, in comparison with competitors.
- Illustrate backwardness of equipment
- Illustrate the technical superiority of American industry.
- What was the course of the industries supplying machinery and kindred products?
- Illustrate the persistence of small-scale manufacture.
- Illustrate the backwardness in equipment.
- What was the attitude of labor in the machine industries?

READING

The most useful book for reading to supplement the topics of this chapter is *British Industries*, edited by W. J. Ashley (London, 1903). Chapters were contributed by different authors, each competent in his field. *Lectures on British Commerce* (London, 1912), gives less attention to manufacture. An elaborate bibliography on the basic industries of England, 1850-1914, is supplied by H. L. Beales, in *Economic History Review*, April, 1935, 5:99-112.

The machine industry comes of age, 1850-1914. (Clough and Cole, chap. 16, pp. 532-559)

Economic development in relation to society, politics and thought (Clough and Cole, chap. 20, pp. 667-698.)

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Recent development of agriculture. (Clough and Cole, chap. 17, pp. 561-584; Heaton, chap. 18, pp. 433-444.)

The coal industry (Lectures, chap. 9, pp. 215-246.)

Iron and steel industry. (Ashley, pp. 2-37.)

Cotton industry. (Ashley, pp. 68-92.)

Woolen industries. (Ashley, pp. 93-119; Lectures, chap. 10, pp. 259-279.)

British railways. (Ashley, pp. 151-172.)

Shipping. (Ashley, pp. 173-195; Lectures, chap. 6, pp. 139-157.)

Organization of labor. (Slater, chap. 21, pp. 256-269.)

CHAPTER XI

English Manufacture, 1918-1939

NEED OF MOBILITY IN ORGANIZATION

"The vitality of modern industry, like that of an organism, is measured by its power of response to external stimulus and of self-adaptation to modified environment. 'Mobility' (in this sense of the term) does not imply incessant or purposeless movement or change, and may be consistent with a high degree of stability and complexity of structure. But it does imply the power of spontaneous reaction to changes in economic conditions, and of internal modification and rearrangement to meet such changes. This is true both of the material and the human factors, of methods of business organisation and of relations among classes, as well as of the personal skill, enterprise and leadership which individuals bring into the common stock. . . .

"It is, therefore, a matter of supreme necessity in this period of rapid and insistent flux and transformation to maintain unimpaired the qualities of initiative and flexibility of temperament, the power of readjustment and adaptation, and the capacity for free and willing coöperation among all the partners in production and distribution. Any waning of these powers could only mean an increasing rigidity and ossification of economic structure, and a progressive enfeeblement of its vitality, for which no measures of external support or defensive organisation could compensate."

These words were written in December, 1926, in the report of a committee appointed "to inquire into the conditions and prospects of British industry and commerce, with special reference to the export trade," and were regarded as of such significance that they were repeated in the final report of the committee, January, 1929.

Their truth will be recognized by all. Their application is obvious, in a period in which a war of unprecedented magnitude

dislocated all parts of the old economic organization, and left a set of new and strange conditions. The process of adjustment and readjustment will be the subject of this chapter. But in connection with the passage reproduced, and in anticipation of subjects to be discussed, the words of an acute and not unsympathetic critic, written of England in 1931, may be quoted. "The entire economic structure is frozen. No other community to-day is suffering to such an extent from this paralysis," "this hardening of the arteries," as he terms it in another place.

SHIFTS IN OCCUPATION

The war produced in a few years shifts in occupations which in ordinary times would have taken decades. Comparing the census of 1921 with that of 1911, and stating results in round numbers, the building trade and agriculture lost each over 100,000 workers, domestic service nearly 300,000, the cotton trade over 30,000. On the other hand, the number employed in metal working, ship building, and the iron and steel industry grew by 320,000, in mining by 160,000, in the chemical trades by 65,000, in the service of the central government by 230,000. The imperative needs of war broke down old boundaries and restrictions, thrust some industries aside, created entirely new ones. The years 1914-18 called into being a new organization, aimed solely at the prosecution of war. The year 1918 began a time in which this organization must be transformed to meet the needs of a new world, not that of the war period, not even that of the prewar period, but of a period differing from either by all the distortions and distress which it had inherited from the conflict.

IMPORTANCE OF EXPORT TRADE

In one respect of outstanding importance the conditions of a recovery to a healthy state remained as before. The committee instructed to examine the means by which "to ensure sufficient and continuous employment and a satisfactory standard of living" agreed that this end could be reached only by the maintenance of a flow of exports to overseas markets (including services done for foreigners), which would pay for the raw materials and the food stuffs on which the country depended for its life. In 1927 the imports of food and raw materials amounted in value

to nearly £800 million (say \$4,000 million). About four-fifths of the supply of wheat and flour, and three-fifths of the supply of meat were obtained from abroad. Coal was the only important raw material in which the country was self-sufficient. All of the cotton, nine-tenths of the wool and timber, and more than a third of the iron ore needed were imported from overseas. "During the past century there has been a steady growth in our dependence on overseas supplies for the essential means of existence, and there is not the slightest reason to expect that the tendency will be arrested or reversed in the near future."

COURSE OF TRADE

The course of trade of the United Kingdom between the two great wars is presented in the accompanying table, which aims to show the volume (value corrected for change in price) of imports retained in the country, and exports of domestic products. As southern Ireland (Eire) was no longer part of the United Kingdom after Apr. 1, 1923, the figures after that date are not comparable with those preceding it. The figures are arranged in three separate series, giving in each the percentage change in volume with respect to the year taken as a base, and should be studied as relatives, with respect to each other and with respect to the flow of time. Figures of the international balance expressed in values will be presented later.

<i>Year</i>	<i>Imports</i>	<i>Exports</i>	<i>Year</i>	<i>Imports</i>	<i>Exports</i>	<i>Year</i>	<i>Imports</i>	<i>Exports</i>
1913	100	100	1924	100	100	1930	100	100
			1925	104	99	1931	103	77
1919	90	55	1926	109	89	1932	90	77
1920	88	71	1927	111	102	1933	92	79
1921	74	50	1928	108	105	1934	97	84
1922	87	69	1929	114	108	1935	98	91
1923	95	75	1930	111	89	1936	105	93
1924	106	76				1937	112	101
						1938	107	90

The first series covers the period immediately after the first World War. British trade was at its peak in 1913, and a sharp decline was natural in a war-shocked world. The ominous feature of the statistics is the contrast of the extent of depression in imports and in exports. The country was, apparently, consuming almost or quite as much as before of commodities brought

from overseas, but was sending back only half or three-quarters as much of its own products.

The period 1924-30, in which a recovery was to be anticipated, shows a persistence, indeed an aggravation, of these conditions. The volume of imports grew pretty steadily, though slowly; the exports did not hold their own.

The last period before the second World War, 1930-38, includes the great depression which shattered the structure of world trade, and instituted a struggle for bare existence among commercial countries. Again Britain showed itself unable to reduce greatly its demand for imports, again its export trade felt the brunt of the shock. Some indications of relative recovery after 1932 are the only hopeful feature of the figures.

The conditions which explain these facts will be the subject of discussion in this and the following chapter.

CAUSES OF DECLINE OF EXPORTS

The situation naturally engaged the serious attention of English statesmen, and I shall follow here the analysis made by the special committee set to study it. A decline in exports to some particular market might be due to one of three main groups of causes:

1. Decline of purchasing power of the local population
2. Growth of local manufacture
3. Displacement of British imports by imports from some other source.

Obviously these causes might work in combination, and it would not usually be possible to determine the share of influence of each. But in the case of cotton goods exported to British India, which declined by 57% in volume between 1913 and 1923, figures were available which showed that of the total decline about three-fifths were due to diminished consumption, about a quarter to increased local production, and about one-seventh to increased foreign competition. In different countries different causes might be at work. The export of pig iron to France, Italy, and Japan showed a decline, over the same years, of 63, 38, and 87% respectively; in France the predominant cause was increase of local production (owing to the recovery of Alsace-Lorraine); in

Italy decline of local consumption, and in Japan competition of imports from China and India.

The decline of purchasing power in markets to which England had formerly exported was particularly marked in the years immediately following the war. The loss in men and capital goods, the derangements of currency and finance and of the mechanism of credit, affected different countries in different measure, but were felt all over the world. Their effect on British exports was most serious in central and eastern Europe, and in the great markets of India and China. In these Asiatic countries and later in South America the English exporter found his market narrowed by the inability of the natives to sell their own products abroad, and by persistent political agitation, breaking out spasmodically in revolution and war.

RISE OF MANUFACTURE ELSEWHERE

The interruption to commerce which attended the first World War led to the establishment in many countries of manufactures, of which the products had formerly been imported. This was true not only of Europe but also of other continents, not only of foreign countries but also of British dependencies. The number of cotton spindles in Japan, China, India, and Brazil rose from 10 millions to nearly 18; the number of cotton power looms in India and Japan rose from 120,000 to 200,000; the annual production of steel in Japan, China, India, and Australia rose from 360,000 tons to 858,000. A list of industries established or extended in this period would include most of the simpler machine products, and a large proportion of the countries of the world.

The war fostered a desire for self-sufficiency, and stimulated patriotic ambitions to round out the national economy by combining manufacture with the production of raw materials. Protective tariffs increased rapidly in number and in the amount of protection. In 1925 the Committee on Industry and Trade estimated that the increase in tariffs had merely kept pace with the rise of prices, but even then the Committee found the tariffs, and the various restrictions which attended them, a serious obstruction to English trade, a view which it repeated in its final report in 1929. With the fall of prices, which came about that

time, tariffs were actually raised instead of being lowered and became in many instances practically prohibitory. This is the period, moreover, in which other countries introduced even more drastic restrictions on trade and set a positive limit, by a system of quotas, on the amount of imports they would receive. The period marked the break-down of the old system of international trade, and the rise of another and very different system, in which countries abandoned their former commercial relations, and tied themselves together in an intricate series of bilateral agreements. A country like Britain, still holding to the principle of free competition in an open market, was frozen out.

COMPARISON WITH OTHERS

England was not the only country to feel the burden of these conditions. The accompanying table shows how different countries fared, giving their trade in 1923 expressed in percentages of that which they had had in 1913.

VOLUME OF TRADE, 1923, COMPARED WITH 1913
(100 Base)

<i>Countries</i>	<i>Total Exports</i>	<i>Exports of Manufacture</i>
United Kingdom	75	73
France	106	117
Germany	53	67
Belgium	63	90
United States	119	148

The depression of one of England's former rivals, Germany, is readily intelligible, and the better showing made by France should be discounted to allow for the increase of territory, with the strong industries of Alsace-Lorraine. Other countries were faring much better in adapting themselves to postwar conditions, and continued to surpass England in the years immediately following. A comparison of eight industrial countries, 1923-25, showed that in increase of exports Czecho-Slovakia headed the list with a gain in those years of 53%, while England was last with a gain of but 2%. Comparing 1913 and 1929 and measuring by volume of exports, so far as information was available, Britain made a worse showing than any other country in the world except Russia.

EFFECTS OF THE WAR ON MANUFACTURE

Many factors combined to hamper the English in their search for markets overseas. We must consider here not merely the external obstacles, the impoverishment of purchasers, and the rise of more or less protected industries in markets formerly controlled. If English manufactures had been sufficiently strong, they could have overcome some of this "sales resistance," and certainly would not have yielded neutral markets to rivals. Returning, therefore, to an analysis of conditions of manufacture in England, we must recognize that in some respects the war contributed to an improvement in efficiency. Under the pressure of war demands, often by direct intervention of the government, the separatism and traditionalism of the old-fashioned manufacturer were, for the moment, broken down. New machinery and new methods were introduced; some industries appeared to be transformed. Some of this gain was permanent; reference will be made later to advances achieved in various lines. But not even war or government could effect a lasting change in English character. Both manufacturers and laborers, the leaders and the rank and file, clung still to the habits of the past. A comparison of the industrial productivity of Britain and the United States, 1924-25, showed that while the American manufacturers paid their labor roughly at 2.5 times the English rate, they got from them a net output 2.8 times the English, and still had a larger proportion of their receipts to apply to costs other than wages and to profits. Industrial efficiency, measured by average output of the worker, increased in Britain in this period in most branches of production, but not sufficiently to meet the needs of the time.

MANAGEMENT

As regards the responsible managers let us attend to the final report (1929) of the Committee on Industry and Trade. "In dealing with such important factors in industrial efficiency as the rationalisation of workshop practice, the standardisation of products and processes, the higher training of managers and heads of business enterprises, the development and utilisation of industrial research or commercial intelligence, and generally all forms of associated and combined action for the purpose of more efficient

production or distribution, we have repeatedly been led to the conclusion that at present one of the most serious obstacles to progress is defective sympathy on the part of persons holding responsible positions in industrial and trading enterprises with new ideas and propositions which involve a radical change of customary practice, or a new orientation of outlook." The Committee found in the industrial ruling class such imperfect mobility, "power of reacting promptly and energetically to external stimulus," as was the fundamental source of mischief in the inefficiency of the laboring class, but found that "the evil in the case of those occupying high and responsible positions in industry and commerce is more prejudicial to British competitive power, because its effects are more far-reaching, and in some ways more difficult to remedy." This view was confirmed by evidence from many sources. A delegation was appointed to study industrial conditions in America, which in its report criticized sharply the old type of owner-manager, and the managers who owed their places to their personal or financial relations to the owners. The delegation urged that management had become a profession distinct in itself, and that appointments and promotions in the industrial staff should be made with reference solely to the experience, training, and ability of the individuals. It found the results of specialized expert management to be an increase of efficiency and avoidance of waste, obtained not only by improved technique in production and distribution, but also by a recognition of the need to secure the cooperation of labor.

The movement to reform, which had to battle against the stubborn individualism of the old-fashioned manufacturer, was hastened by the insecure financial position of the export industries. Forced to borrow heavily, they became subject to the influence of bankers who insisted on more effective management and on broader cooperation. A step in this process was the establishment in 1930 of the Securities Management Trust which, under the guidance of economic experts, was designed to further industrial reorganization.

EQUIPMENT

Progress was made in the modernization of plants, although owners who had postponed improvements in the period of pros-

perity found them much more difficult of accomplishment in this period of adversity, particularly under the burden of heavy taxation. Reform was hampered by the condition already mentioned, the long-established location of the different enterprises, which made a thoroughgoing reconstruction almost impossible. English manufacturers faced another difficulty in the mechanization of industry. Lacking a broad home market, and selling the larger part of their product to customers in many different countries, they were forced to a varied output. They maintained their trade by their willingness to accept small orders, and by their ability to produce goods of a special quality. Automatic machinery lost much of its efficiency when attempt was made to apply it to a miscellaneous business of this kind.

STANDARDIZATION

These conditions explain in part the slowness of the English manufacturers to standardize their products. The Committee on Industry and Trade cited as an example of the difficulty which they faced the case of an engine-building firm which made locomotives of 24 different gauges, between 18 in. and 5 ft. 6 in., varying in weight from 6 to 60 tons. A manufacturer of insulated wire complained to the Chamberlain Tariff Commission (1909), "Until quite recently every engineer has had his own ideas and insisted upon having them carried out. We had some thousands of different patterns of one class of cable, varying sometimes by thousandths of an inch. They were unnecessary and useless, but had to be complied with or the cable was rejected." As suggested in this quotation, the diversification of product, which was a necessity in the export trade, was demanded also in the home trade. Even the locomotives built for British railways had to conform to such a variety of specifications that at best they could be turned out in very small lots.

Standardization, the determination of a limited number of types and sizes of product and the refusal of all others, is a factor in economy and efficiency which reaches far. It concentrates the brains of a business on the difficult problems and turns over to machinery and to common labor the parts of the process that they are competent to perform; it saves capital, saves time, saves material. In it is involved a large part of what is termed

"rationalization" or "scientific management." If England lacked the broad market of the United States to stimulate the movement toward standardization, the older country had allowed or required a diversification of product which was altogether unnecessary. Technical experts realized this fact and organized a Standards Committee in 1901, incorporated as the British Engineering Standards Association in 1918, which had great influence. Its specifications reduced the sections rolled from iron and steel from many hundreds first to 175, later to 113, with a saving estimated at a million pounds sterling a year; 75 sections of street car rails were reduced to 4. Outside the metal trades the movement toward standardization was marked in the electrical industry, and was furthered by the government control of industry during the war. Much was left still to be accomplished, however, for example in ship building and in mining. One firm making wheels for the carriage of the products of mines reported that it had over 3,000 patterns in stock, differing in many cases by a mere fraction of an inch, though some 50 would amply meet the needs of the country. Thoughtful English leaders were much interested in the movement toward simplification in the United States, begun during the war and continued under the influence of Mr. Hoover, but found it extraordinarily difficult to obtain such agreement among the manufacturers of their own country as was necessary to realize its economies.

RESEARCH

Some years before the first World War the English had become convinced that one reason, at least, why they were being passed by Germany and the United States in industrial efficiency was the neglect at home of advanced technical training and of scientific industrial research. Early in the course of the war the government established a permanent official organization for the promotion of scientific and industrial research, placed at its disposal a fund of a million pounds sterling, and arranged that it should contribute (usually half and half) to the expense of investigations carried on by private trade associations. Some 26 of these associations were formed during the next ten years, embracing most of the important industries, but not ship building, railways, steel manufacture, and parts of the chemical in

dustry, which sought to provide for their needs in other ways. Some of these associations were formed for such special trades as laundering, flour milling, and for the cocoa, chocolate, confectionery, and jam industry. The fruits of such research are likely to be slow in coming although they may then be cumulative in amount. The English were far behind the Germans in the date of beginning, far behind the Americans in the sums of money provided. The movement was at least significant in the change of attitude which it marked, and offered promise for the future.

STATE INTERVENTION AND CONTROL

Most significant of the changes in the period between the two wars was the gradual abandonment of the principle of free and unrestrained competition as a regulator of industrial activity, and the substitution for it of control by the state. *Laissez faire* had worked well in the nineteenth century, when the world market was ready to take a constantly increasing flow of manufactures, which the British were best qualified to supply. Conditions were transformed after 1918, when foreigners had to restrict their purchases, and new competitors arose abroad to fight for the narrowed market. British export industries were left with a great surplus capacity, with plant and equipment set in old forms, under pressure to produce and sell at any price. Cut-throat competition demoralized the market, and weakened the credit even of those firms which had been cautious in their finance. The individualism which had been the pride of British industry threatened now to cause its ruin. Voluntary combination would have saved the situation, but attempts to achieve it in the old industries fought a losing battle against the traditional separatism, and appeared sometimes helpless against the attacks of outsiders and deserters.

Illustrations of the conditions and results will be given in following pages. An example may be offered here from an industry which was among the worst sufferers, ship building. British shipyards had grown in number during the first World War, and at its close were ready to supply double the amount of new tonnage wanted. Ruinous competition ate away profits; more than half of the workers were at times unemployed. Shipping, suffering from a like plethora, was similarly depressed.

With government approval, and with the aid of the Bank of England, the Shipbuilders Security Company was formed (1930), comprising firms accounting for more than 90% of the capacity of the industry. A tax on the sale price of ships launched by its members was used to buy up and dismantle superfluous shipyards, uneconomical in operation, but still struggling to share in the output. An act of 1935 extended the principle from shipyards to ships. The "Scrap and Build Scheme" offered government loans on very generous terms to ship builders who would scrap two tons of old shipping for every ton of new that they built, or would scrap one ton of old for every ton of old modernized.

In different industries the planned reorganization took different shapes. In all, even in agriculture, the tendency was the same, toward a regulation of output and prices, whether by private associations or by the state. "Free competition has nearly disappeared" (Lucas, 1937); "'laissez faire' has long since been replaced by State intervention in almost every sphere of economic life" (Francis, 1939). Unconsciously the British were planning, far in advance, for the economic mobilization needed in the war which began in 1939.

AGRICULTURE

Even with all the help the state could give, agriculture in this period carried on a losing fight. The number occupied in it still declined, and came to form less than 6% of the working population. The government offered it favors in taxation, and sought to protect it from foreign and from domestic competition by a multitude of devices—"quantitative regulation, subsidies, levies, guaranteed prices, tariffs and marketing schemes" (Richardson).

The accession to power of the Conservatives, 1931, gave to the landed gentry an opportunity to befriend an industry to which they had always been partial. While they still allowed the free import of wheat from British dominions they guaranteed to the grower of domestic wheat a price sometimes more than double that ruling in a free market, and stimulated the extension of acreage of a crop ill suited to the natural conditions. The dairy industry was subjected to an elaborate scheme which regulated the production and marketing of milk. The producer of meat

and butter was given the protection not only of a tariff, but even of quota restrictions which set a positive limit on the amounts that could be imported from certain countries.

The "tax on food" which had been swept away by the repeal of the corn laws a century before now reappeared. The people were scarcely conscious of it. Food prices were falling, the world over, after 1929, and fell even in Britain in this period. The effect of the legislation was to raise some particular prices, but, taking food prices all together, to prevent them from falling as far in Britain as they fell in the world market. The British consumer did not as yet feel the pinch.

COAL

The problems in postwar England can be illustrated by a survey of the conditions in some of the export industries. We may take first coal, which in the past had been the material basis of Britain's industrial and commercial success. It provided not only a cheap source of energy to drive manufacture and to transform materials, but also offered in raw form a reliable and important contribution to the export trade. About a third of the total output had been exported. Shippers wanted it not only to supply their bunkers, but also to fill out their cargoes, consisting mainly of manufactured articles of small bulk; and were willing to carry it at a very low rate of freight.

The demand of the world for coal, which had been steadily increasing before the first World War, slackened thereafter. In 1925 it was actually less than in 1913. Coal was losing place to petroleum products, and to hydroelectric power. More efficient engineering reduced the coal requirements even of the steam engine. Meanwhile new coal fields were being opened on the Continent, and the great lignite beds of Germany were in process of development. New competition appeared even in that part of the field which had not been won away by substitutes. The export of coal, which in 1913 had been, in millions of tons, 98, dropped in 1920 to 44, in 1921 to 38. There was a sharp recovery when the French invaded the coal region of the Ruhr; in 1923 the figure rose to 103, only to drop again to 82, 69, and so on.

In its long history the British coal industry had skimmed the cream of its resources. The average output per worker had begun

to decline even before 1900. Coal reached the surface from deep down, sometimes after a horizontal run of two or three miles. Equipment was primitive. An American critic compared the mine cars to baby carriages, the railroad cars to delivery trucks. Nearly half the mines employed each less than 100 workers and inevitably operated at high costs. They made only a slight contribution to the total product, but fought bitterly for their share of the market. Owners protested that they were operating at a loss; they demanded and obtained a cut in wages and a lengthening of hours. Miners asserted that the capitalist structure of the industry made for inefficiency, that the management both of production and of distribution was incompetent, and demanded that the industry be nationalized, taken over by the government. The miners resented particularly the royalties (nearly £5 million, 1934) collected by owners of the surface soil, who made no contribution to production, who might use their land for a game preserve, but who would charge what the traffic could bear if a mine gallery extended beneath it.

REFORM OF THE COAL INDUSTRY

Readers familiar with conditions in the United States will recognize many features of a problem of persistent oversupply and uneconomical competition which was not peculiar to England, although it was intensified there by the loss of the foreign market. The whole industry needed reorganization, but could not of its own initiative attain it. Methods of production, transportation and management sanctified by a century of usage, required reform. Capital was needed for technical improvements, but further investment in a sick industry was not attractive. The inclination of the seams in many mines made the introduction of mechanical coal-cutting devices more difficult, but was not enough in itself to explain the fact that in Scotland, before 1930, 45% of the coal was still mined by hand, in the rest of Britain even 82%, while in the Ruhr 80% was machine-mined. Coal was sold often in the raw state, without washing, entailing every year a transportation charge for millions of tons of dirt; 23% was machine-washed as compared with 85% in France.

The problem of the coal industry had long been prominent in English politics, and had been subjected to elaborate investiga-

tions. At last, in 1930, the government intervened with decision. The Coal Act of that year was designed to limit production by a system of quotas, reduce cut-throat competition by a system of minimum prices, force the mines to enter into combination, concentrating on the best units, closing out the others. It would be hard to imagine a more complete abandonment of the principles of free competition and *laissez faire*. Opposed by various interests, and weakened by court decisions, this act was followed in 1938 by one still more drastic. All the royalties were to be bought out by the state, and vested in a commission; this commission was to have a way cleared to compel a combination of mines which would respect the fair interests of all concerned, but would embody the economic concentration required in the general interest.

The act of 1938 was to come only gradually into operation, but marked the way in which a solution was to be attained. Meanwhile some technical progress had been made. The amount of coal in Britain cut by machinery, 1938, was 59% of the total, the amount handled in the mines by mechanical conveyors was 54%, the amount mechanically cleaned was 54%.

COTTON

If conditions in the cotton industry, formerly the mainstay of the export trade, were not so bad, they still gave ground for serious concern. A specialist of the industry (Professor S. J. Chapman), writing in 1905, thought that "the worst that we need immediately fear, it would seem, is a considerable retardation of the rate of growth of our industry, gradually administered, which might bring the Lancashire industry to the stationary state." In the early '80's England had operated over half of the cotton spindles of the world. In 1914 the proportion had fallen below 40%, in 1927 it was little over one-third. While the number of spindles and looms increased in other countries, it remained stationary or declined in England. In 1926 England still led all other countries. It had over one-third of the spindles of the world, one-quarter of the looms, it accounted for about half in value of yarns and piece goods exported. But comparing the volume of exports of 1910-13 with postwar years, there had been a very considerable decline both in yarn (from 100,000 to

80,000 tons) and in piece goods (from 6.6 to about 4 milliard yards). English yarns were of fine quality, and formed actually a larger proportion (measured by value) of the shrunken trade of the world after the war. English piece goods, likewise, held their ground in fabrics of high quality. In coarser products the English trade declined in countries (notably India) where a native industry had developed, and in markets in Asia, Africa, and America where the competition of new rivals (Japan, Italy, etc.) was felt.

The Lancashire operatives had held the doctrine "wages determine prices." Such a doctrine could be advanced in a period in which England, by its superior efficiency, could be said to control the markets of the world. It became an empty phrase in the period after the war. English manufacturers, paying relatively high wages for a 48-hour week, found it impossible to market their coarser goods over tariff barriers or in competition with rivals paying lower wages for longer hours, often with a system of double shifts which reduced the indirect costs. The percentage of unemployed in the cotton industry approached and then exceeded the figures in coal mining.

ATTEMPT TO REFORM THE COTTON INDUSTRY

The organization of the industry has been described in a previous chapter. In summary, it was stratified in six separate layers: merchants and brokers who handled the raw cotton; spinners; yarn merchants and brokers; weavers making the cloth; the finishing trades; piece-good merchants marketing the product. Functioning admirably in the period of free competition and *laissez faire* in which it had grown up, in which England commanded the world market in cotton goods, it proved to be antiquated and helpless under the new conditions. A deeply rooted individualism made impossible the economies which could have been attained by vertical integration, bringing the different steps in the process under consistent planned control; made impossible the horizontal combination which could have rescued the industry from ruinous competition. The great surplus of productive capacity led in each stage to a blind struggle among those who sought to keep their heads above water for the moment. Attempts at voluntary combination broke down as outsiders re-

fused to join or members deserted, and spoiled the market by underbidding. Trade unions relaxed their restrictions, but a far-reaching technical reorganization of spinning was hindered by a lack of capital, and by the proved superiority of foreign competitors in the manufacture of cheaper grades of goods.

At last, in 1936, the government intervened by an act which gave the spinners power, by a tax on mills in operation, to buy out and scrap the surplus spindles of the industry, estimated at some 10 million. In two years of operation the plan reduced the number by 4.5 million, and at that time (1938-39) the government was studying projects to extend to the whole industry a system of reduction of surplus equipment and of fixed minimum prices which would help to rescue it from its difficulties. From 1930 down to the outbreak of war the percentage of unemployment in the cotton industry declined only in a short and exceptional period to about 10%, rose sometimes over 40%, and ranged in general about 20%.

IRON AND STEEL

In the iron and steel industries there had been a sharp expansion in the course of the first World War to meet the demand for munitions. So far as the urgency of the situation allowed, the new steel plants, which increased productive capacity by about a half, were built adjacent to blast furnaces, so as to get the advantage of receiving liquid iron for conversion instead of wasting heat by melting the cold pig. In 1913 less than 28% of the pig iron used for making steel was received in a molten condition, while in 1924 the corresponding percentage was 45. New blast furnaces were built, larger and more efficient than the old, and some of them were provided with mechanical charging devices. In place of the old beehive ovens, which had been in the majority before the war, modern by-product ovens were built to manufacture coke, saving both heat and the gases and other by-products which previously had been wasted. By these and other changes the efficiency of the English industry was greatly enhanced. That it reached the standard of the best practice on the continent of Europe and in the United States cannot be asserted. The English industry was too firmly set in old lines to be suddenly and entirely recast. Many old and relatively in-

efficient features persisted; some of the improvements were surpassed in other countries almost as soon as they had been introduced in England. Before 1930 the average weekly output of blast furnaces was still under 1,000 tons, while many furnaces on the Continent and in the United States produced that much daily. Burdened with a heavy capital charge by reason of extension effected at war prices, the industry could not afford the expenditure needed to bring it up to date.

The industry suffered, moreover, from shifts in demand which were beyond its power to control. Iron ("wrought" iron, the product of the puddling process), which had been an English specialty, was constantly losing ground to steel. The demand for pig iron for casting diminished as steel took its place. In steel itself the open hearth was winning the market from the Bessemer product, and basic steel was displacing the acid steel which Britain had been used to make. A large part of British plant was equipped to supply products now less wanted. In foreign trade, taking iron and steel and their products all together, there was normally an excess of exports over imports in tonnage, and a large excess in value. But there was not, at home or abroad, a market sufficient to provide employment to all those engaged in the industry. The percentage of unemployment in the iron and steel trades was about 20 in every year of the seven years 1924-30, rising to over 40 in 1931 and 1932, diminishing thereafter, as the tariff of 1932 protected the home market, and reaching a low of about 10% in 1937.

The government granted the relatively high rate of protection, $33\frac{1}{3}\%$, on condition that the industry reorganize itself, to avoid the evils of wasteful competition. The acceptance by the industry of a "constitution," 1934, was a step, more formal than real, toward effective combination. A consolidation of some of the producing firms, and a considerable investment of capital in renovations, did raise efficiency, and the persistent surplus of producers was carried on for the time being by the demands of a building boom and of rearmament.

MACHINERY

In the machine trades, before the outbreak of the first World War, as shown in the previous chapter, England still led all other

countries in exports, but already saw its position menaced by the rapid advances made in Germany and in the United States. During and after that war the United States increased its product with extraordinary rapidity, and took the lead in export to the world market. England remained in production about on the prewar level, and in its sales abroad lost ground. Among the different factors contributing to this result the attitude of the labor engaged in the industry must be counted as of serious importance. The "dilution" of labor, in the course of the war, by the introduction of women and of untrained men, some of them of the clerical and professional class, led actually to an increase in output. Girls at work on the turning and boring of shells doubled the product of trained trade unionist mechanics, working the same machines under the same conditions. The construction of the *Queen Elizabeth*, in a period of war when fighting ships were a vital national need, was held up by a dispute between machinists and boilermakers as to who should put the bolts in the turrets. Even during the war the men employed in shipbuilding would not give up old habits of drink which caused losses up to a quarter of their working time. In the period of demobilization the old working force returned to its former position, with a tendency to "nurse the job" and with covert opposition to the introduction of improved machinery. An American engineer (1921) found the shop spirit in the English metal-working industries the worst which he encountered anywhere in Europe; it was marked by suspicion and malingering. The working week was reduced in 1918 from 53 or 54 hours to 47, with a corresponding increase in the hourly rates of pay, and on the undertaking of the trade unions to maintain the greatest possible output. In some lines the output declined in correspondence with the shortening of the time worked; in some lines employers asserted that the fall in output was proportionately greater than the shortening of the time, that actually less was produced in an hour. The postwar period was, of course, marked by exceptional conditions: the reaction from the strain of the war, disarrangement of the normal course of supply of raw materials and demand for finished products, and other disturbing factors. On the whole, however, it seems certain that workers in the machine trades failed to readjust their habits and standards

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in an era in which the country had to maintain the highest standard of efficiency to keep the place in world trade which it needed for its subsistence.

QUESTIONS

Why did the English committee stress the importance of "mobility" in organization? What elements are comprised in it?

What important shifts in occupations did the first World War cause?

Why was the export trade still so important?

What was the course of imports and exports after 1918?

What external causes of the decline in exports can be distinguished? Illustrate.

Illustrate and explain the development of manufactures elsewhere.

How was the trade of other important countries affected?

What beneficial effects did the first World War have on English manufacture?

In what respect was management still deficient?

Explain persistent deficiency in equipment.

What is meant by standardization? What advantages does it offer?

Illustrate English deficiencies, and what was done to overcome them.

What was done to further scientific industrial research?

Why did not *laissez faire* work under the new conditions?

Why did not voluntary combination restrict the evil of cut-throat competition?

Illustrate conditions in ship building, and measures taken to meet them.

What policy was adopted toward agriculture? Why?

Why did not the people oppose a tax on food?

What were the particular difficulties of the coal industry, as regards market, condition of production, capital and labor?

What was the policy adopted to meet the situation?

What had been the course of the cotton industry?

Explain the difficulties of that industry, and why it was unable to overcome them.

What was the remedy proposed by the government?

What improvements had been effected in the iron and steel industry?

What were the particular difficulties in that industry?

What was done to relieve it?

What was the course of the machine industries? Illustrate the attitude of labor.

READING

On the subjects of this and the following chapter excellent books are provided by André Siegfried, *Post-War Britain* (London, 1924), and *England's Crisis* (London, 1931).

On specific industries G. C. Allen, *British Industries and Their Or-*

ganization (London, 1933, bibliography, pp. 325-330), is admirable. This may be supplemented by *Britain in Depression* (London, 1935), prepared by a research committee of the British Association for the Advancement of Science and containing accounts of a score of industries by different authors, and by Alfred Plummer, *New British Industries* (London, 1937). Arthur F. Lucas, *Industrial Reconstruction . . . The British Experiments* (London, 1937), is an important contribution on the subject of state intervention and the control of competition.

A useful and inexpensive handbook on the British economic system will be found in Hugh Butler, *The United Kingdom*, Washington, 1930 (Bureau of Foreign and Domestic Commerce, Trade Promotion Series no. 94, \$1.75 bound, bibliography, pp. 925-940).

The first World War. (Clough and Cole, chap. 21, pp. 699-728)

The postwar crisis. (Siegfried, *Britain*, pp. 44-60; *Crisis*, pp. 29-50.)

Causes of the crisis. (Siegfried, *Britain*, pp. 61-87; *Crisis*, pp. 51-98.)

Foreign trade. (Siegfried, *Britain*, pp. 88-111; *Crisis*, pp. 99-118.)

British industry before and after the war. (Allen, chaps. 1, 10, pp. 1-19, 271-286.)

Coal. (Allen, chap. 3, pp. 29-76.)

Iron and steel. (Allen, chap. 4, pp. 77-133.)

Machine trades. (Allen, chap. 5, pp. 134-144.)

Ship building. (Allen, chap. 6, pp. 145-167.)

The automobile industry. (Allen, chap. 7, pp. 168-204.)

Cotton. (Allen, chap. 8, pp. 205-250.)

Woolen industries. (Allen, chap. 9, pp. 251-270.)

Changes in the structure of industry. (Allen, chap. 11, pp. 287-324.)

CHAPTER XII

England: Problems, 1918-1939

DEMOBILIZATION

The preceding chapter began with a discussion of the need of mobility in economic organization, borrowed from an English report, and with a statement of the shifts in occupation during the first World War, when England mobilized not alone its army but also its industrial population. The problem of demobilization involved not merely the return of soldiers to civil life, but also a change in the internal organization, reducing numbers in the war industries. At best this problem was hard to solve without suffering and loss. But it was made far more difficult by the fact that not England alone but the rest of the world as well had changed during the war. A return to the old prewar organization no longer met the conditions. England had a new and far more difficult problem to face. It must mobilize again, to face the changes of a new world. As it had shifted its troops in time of war, to make the most of every unit of man power, so it must now adapt its economic organization so that every able-bodied worker could contribute the most of which he was capable to the national income.

The gravity of the problem was not immediately apparent. In England as in the United States there was a postwar boom, with a deceptive appearance of prosperity. Construction and development work and the renovation of equipment, postponed during the war, were now carried out. Factories worked full time to replenish exhausted stocks of goods. Profits were high. Factories were enlarged, new securities were lavishly marketed, all on the assumption that prosperity had returned at last, and had come to stay. Only gradually did people realize that all these phenomena were but the aftermath of the war, and that peace held very different conditions in store for them.

SHIFTS IN OCCUPATION

The survey of the important export industries gives the picture of an unhappy struggle to meet the new conditions. Such shifts in occupations as occurred were of a disheartening character. The occupations which declined in relative number were just those on which England had counted in the past to provide means of payment for the necessities which it must import. There were substantial declines in mining, the old branches of the metal trades, most branches of the textiles. New manufactures which had developed—electrical apparatus, motor cars and airplanes, rayon, some branches of the chemical industry—did not balance the shrinkage of the old, in their capacity to sell abroad. On the other hand, the occupations which grew in relative importance were sterile, from the viewpoint of foreign trade; they were occupations in which one Englishman had to be supported by another. Such were building, public works, government service (employees of the central government declined in number while those in local government grew), domestic service, above all the distributing trades.

UNEMPLOYMENT

More serious even than this shift in occupation was the prevalence of industrial unemployment. After December, 1920, there were always (except for one brief period) over 1 million capable of working but idle; in parts of 1921 and 1922 the number exceeded 2 million. In 1931-33 the number of unemployed approached 3 million, roughly 1 in 5 of the insured workers.

A certain amount of unemployment is inevitable in any industrial country, and may be considerable in an industrial depression. In England, in the ten years before the war, the percentage of unemployed is estimated to have been 3 in the best year, 8 in the worst. Such a persistence of unemployment on such a large scale was, however, without precedent, and indicated a problem of an entirely new order. The distribution of unemployment in some of the most important industries is presented in the table below, which gives the average percentage (round numbers) of registered workers unemployed in Great Britain in the first quarter of selected years: 1924, a fair sample

of conditions after the first World War (except for the coal industry, stimulated by the French invasion of the Ruhr); 1927, a relatively good year; 1932, when conditions were at the worst; 1939, just before the second World War. Workers on strike, it should be noted, are not counted in the figures.

PERCENTAGE OF INSURED WORKERS UNEMPLOYED

<i>Year</i>	<i>Coal</i>	<i>Iron and Steel</i>	<i>Machine Trades</i>	<i>Ship Building</i>	<i>Cotton</i>	<i>Woolen</i>
1924	3	18	18	28	16	7
1927	16	18	13	30	9	11
1932	28	47	28	57	26	17
1939	13	18	8	20	20	14

CONDITION OF LABOR

The position of the wage earner had greatly improved in the course of the nineteenth century. Sir Josiah Stamp, a competent statistician, estimated that the average laborer could buy 4 times as much in goods—food, clothing, house rent, etc.—as could his predecessor of a hundred years before. Measured by that standard the laborer's position seemed highly satisfactory. Measured by an ideal standard it was still deficient. One-third of the families of the working class were estimated, just before the first World War, to be living on 25s. (say \$6.25) a week, barely enough to maintain efficiency. One-fourth of the persons employed in manufacture were in industries yielding under 30s. (\$7.50), to cover not only wages but also interest, profits, and miscellaneous expense. The annual average net product of manufactures taken all together was only about £100 (say \$500) per person employed.

The immediate result of the war was to raise somewhat the level of real wages, particularly of those of unskilled laborers, who obtained an increase in purchasing power of 10% or more. An investigation of sample districts, comparing the periods 1912-14 and 1923-24, showed a rise in the standard of living. Taking as a minimum standard that below which "a family could not with the utmost economy be adequately fed, clothed, and housed" the percentage of families living above this standard was found to have risen from 88 to 95 if full-time wages were assumed at the latter date, or to 92 if account were taken of broken employment, while the proportion of families living

definitely below the minimum fell by one-half even after allowing for unemployment. Further, these improvements were accompanied by a considerable reduction in the hours of work per week, which fell from between 53 and 54 to 48 and even 47 in the principal industries.

ATTITUDE OF LABOR

In some industries the improved conditions of labor were accompanied by such an increase of efficiency as kept the wage costs to the manufacturer at or below the former level. In others, and in some of the more important trades (cotton and metal working), this was not the case. The trade unions, which during the war had consented to the suspension of their rules, and had permitted the "dilution" of labor by women and unskilled workers, resumed their former attitude with the conclusion of peace. An Industrial Inquiry, organized by the Liberal party and enlisting the support of distinguished economists, reported (1928) that "the organised workers in many industries have adhered to certain practices which involve restriction of output, thus discouraging men from putting forth the maximum effort of which they are capable without undue strain, have put obstacles in the way of the adoption of labour-saving devices and of method of payment calculated to stimulate energy, and in some cases have done everything in their power to limit the entry of new workers even into trades in which there is a great demand for them. In general, the workers, whether as organised bodies or as individuals, have not felt any responsibility for the increase of efficiency in production in their industries." Attempts made during the war to bring capitalist and labor into closer cooperation by the organization of Whitley Councils (shop committees) proved fruitless in the long run, and the postwar period was one of industrial strife with strikes more serious than they had ever been before. The accompanying table of labor disputes in three periods of equal length gives the facts.

<i>Period</i>	<i>Number of Disputes</i>	<i>Workers Involved</i>	<i>Average per Annum</i>	<i>Number of Days Lost</i>	<i>Average per Annum</i>
1898-1905	4,371	1,345,000	168,000	34,500,000	4,300,000
1906-1913	5,561	4,546,000	568,000	89,300,000	11,100,000
1919-1926	6,553	11,081,000	1,385,000	357,000,000	41,300,000

The year 1926 was marked by an attempt at a general strike, as a political measure to force the hands of the government. Initiated by the miners and transport workers, it spread to other occupations, but broke down before the determined attitude of the government and the public.

CAUSES OF UNEMPLOYMENT

A laborer, able and willing to work, will lack employment when the capitalist who might advance his wages calculates that he cannot, taking all costs into account, sell the product at a profit in any market open to him. This short sentence is a summary, obviously, of the elements of economic theory, and in its practical application to the English situation would require a review of all the facts that have been presented in preceding pages, to illustrate on one side the decline in the demand for English products, and, on the side of supply, the relatively high cost of production which prevented sales in competition with more efficient rivals.

If laborers were unable to get work in their customary occupations, why did they not seek and find employment in some other line of work? In a brief period of depression one would scarcely expect an operative trained in a particular trade to desert it for some other in which he would start at a disadvantage. One would suppose, however, that long years of short time or of entire lack of employment would force men from a depressed trade to some other, or even to some other country where conditions were more favorable. If they could not find work in their former occupation and at their former rate of wages, why did they not offer to work for less, so reducing costs and enabling employers to market the goods which they produced?

IMMOBILITY OF LABOR

Answers to these questions must be attempted here, although it will be possible to indicate only briefly some factors in a very complex problem. In the first place it must be noted that, as stated above, there was to some extent a shift in occupations. Even if it had been more extensive it would have offered no permanent solution of England's problem, for in general it reduced the man power in the export industries, and sent people

into the "sheltered" trades, producing for the local market but in the long run dependent for their food on what the export industries could buy for them. Actually, as the last table shows, it left still in export industries, as well as in others, a great surplus of unemployed.

This immobility of labor can be explained in part by a recognized characteristic of the English people, a dogged persistence in traditional ways of work and life which fitted the people ill to face a transformed world. To some extent, just how far it is hard to say, the immobility was established and even furthered by positive action of the government.

RISE OF LABOR IN POLITICS

The English government had in the nineteenth century been slow to grant the demands of labor, whether for a better status of trade unions or for public contributions to social welfare. A change in its attitude was forced by the increase in political influence of the mass of the people. Extensions of the suffrage in 1867 and 1885 changed England from an aristocracy to a democracy. The working class was slow to make active use of its new power. It was content, in general, to allow itself to be represented in Parliament still by members of the upper class. Two members of the House of Commons were elected in 1874 to represent the miners, but down to the end of the century there was never more than a small group, a dozen or so, of labor members. There was now, however, at least a menace in the background, to force the legislature to attend to the demands of labor. The decision in the Taff Vale case, 1901, making a trade union liable to a suit for damages and so threatening its independence of action, was set aside by an act of Parliament in 1906, which legalized peaceful picketing and protected the funds of a union from attack. It was significant that in that same year more than 50 members had been returned to Parliament by the labor vote, which had become a political factor to be seriously considered. An Old Age Pension Act, passed in 1908, was one of several measures designed to improve the conditions of life of the working class. The Osborne case, 1909, which would have prevented trade unions from using their funds for political purposes, lost some of its effect by the establishment of modest salaries (£400) for mem-

bers of the House of Commons, and was abrogated in its most important features by the Trade Union Act of 1913. With the extension of the suffrage to women the labor vote rose after the war from a few hundred thousand to over 2 million, and the number of representatives to slightly above 50. In the hard times, 1922-24, the labor vote grew to over 4 million, and the number of members to 150, more or less, in a total membership of the House of Commons slightly over 600. In 1924 for the first time a labor ministry took office under Ramsay MacDonald, and though it lacked a majority governed for the larger part of the year. When the Conservative government which succeeded it appealed to the country in 1929, on the issue of protection, labor polled a vote of over 8 million and elected nearly 300 members, returning MacDonald again to office.

NATIONAL INSURANCE AGAINST UNEMPLOYMENT

This sketch of the growth in political power of the working class will help to explain the unemployment policy followed by the government after the first World War. A National Insurance Act had been passed by the Liberal government of Lloyd George in 1911, which included provisions for insurance both against illness and against unemployment. With respect to unemployment the act was restricted in scope. It applied to only a few industries, particularly to those engaged in construction work; it made but a small contribution from the public purse; it limited the benefits to a small sum (7s. a week), to be paid for not more than 15 weeks. The act was extended in 1916 to include the war industries, and in 1920 to include all employees except those in domestic service and in agriculture, so embracing about two-thirds of the total workers, and raising the number subject to its provisions from 4 to 12 million. The tendency from that time on was to relax the restrictions and to extend the benefits of the act. It applied in 1920 to those who could not find work of any kind at the rate of pay which they had been receiving; that is, a man was required to accept work to which he had not been trained but only under conditions as favorable as those to which he had been accustomed. In 1927 this was altered so as to justify a worker in refusing employment if it was not in his usual occupation as well as at his usual rate of pay. In 1930, under the

second MacDonald administration, he was relieved of the need of seeking work himself and was assured benefits unless he had "refused without good cause suitable employment offered him by a Labour Exchange." The time limit on the payment of benefits was abandoned in 1924 under the labor government in office at the time and the amount of the benefits was raised by various amendments from the original 7s. to 17s., with the addition of 9s. for a wife and 2s. for each child; the sum could be added to by local authorities and was increased in purchasing power by a general fall in prices. The original theory of proper "insurance" had to be abandoned. If stoppages had been scattered and infrequent, the people affected by them, employers and employees, could have accumulated a reserve in periods of activity to tide them over bad times; this would have approached real insurance. When unemployment was so general and so persistent the reserves vanished; the benefits to those out of work could not be met by premiums paid by employers and employees who were still engaged in production; a constantly increasing part of the burden had to be assumed by the government.

BURDEN OF TAXES

Even before 1914 the people of England were paying in taxes to the central and local governments over one-tenth of their income (1913-14, 11.2%; cf. U. S., 6.4; France, 13.3). The war left a load of debt which could be carried only by great exertion. The people of England were more heavily taxed than those of any other great country (1923-24, 23.2%; cf. U. S., 11.5; France, 16.6). A wealthy man had to pay the greater part of his income in income tax, and if he desired to leave his property unimpaired to his heirs would find that the whole remainder of his income would not suffice to pay the life insurance required to offset the inheritance tax. The government had to depend more and more on the savings of the propertied classes to pay the expenses of those who were contributing nothing to the national product. As the country approached the crisis of 1931, a commission reported (June, 1931) that the policy followed to that time could not possibly be continued, if the government were to balance its budget. The insurance fund, already in debt to the government for over £80 million (say \$400 million), was continuing to

draw on it for almost a million pounds a week. The commission proposed that unemployment benefits be reduced (for an adult, for example, to 15s. a week), that contributions be increased from employer and employee as well as from the government, and, most important of all, that the payment of benefits to a person out of work terminate after 26 weeks. Leaders of the labor party, such as Ramsay MacDonald and Snowden, agreed to the necessity of some such action, and on appeal to the country in a general election were confirmed by a sweeping majority of the voters.

EFFECT OF UNEMPLOYMENT RELIEF

There is difference of opinion as to whether the effect of the policy of unemployment relief was a demoralization of the working class. No one is qualified to speak dogmatically on such a subject, particularly when he is called upon to appraise subtle changes in character over a relatively brief period of time. No one can assert with any confidence just what would have happened if the government had followed more sternly the principle of Malthus, that "no person has any claim of *right* on society for subsistence if his labour will not purchase it"; perhaps such a course would have led to a social revolution without remedying the economic difficulties. But, on the other hand, no one can contest certain obvious results of the policy. Whether or not it undermined the will to work, it certainly reduced the incentive to work. Laborers who were paid to remain idle indefinitely had less reason to seek work in other places, to seek work in other employments, to seek work at lower wages than those which they had been used to receive. The level of wages, not only nominal but real, was actually above that prevailing before the war. The Minister of Labor (July, 1931) estimated that weekly full-time nominal wages had risen 70% and hourly wages 90 to 95%, comparing 1914 and 1931; that the cost of living of the working class had risen only 45%; consequently that the level of real wages had risen 17%, measured by the week, 30 to 35% measured by the hour. These figures took no account of short time or of unemployment. They did not mean that the working class, taken as a whole, was better off than before the war. But they certainly meant one thing, that the employer who did not

find the increased wage balanced by an increased output had to count on increased costs.

COSTS

At the very time when he found his market restricted in other countries he found his capacity to compete hampered at home. No one would dream of asserting that, measured by ideals, the wage of the English worker was too high. It was considerably above that of most European countries, and double that of many of them, but it was considerably less than that paid in the United States or in Canada. Every sensible person would have wished to see a further increase of the wage in England—if the worker could earn it. Any friend of the working class, however, could not but feel disquiet to see maintained a level of wages which so many could not earn. An economist does not need to be a misanthrope to be inclined to believe that those who were at work could have contributed more effectively to production if the threat of dismissal had not lost its sting, and that many of those who were not at work would have found some way to contribute to production, to their advantage rather than to their injury, if the pressure on them had not been so much relaxed. Friends of the working class opposed the unemployment policy because they believed it ruinous to the workers themselves. In the long run means must be found to buy from abroad the necessary food for the people. Exports must be maintained to buy imports. The real employers of the workers in English export industries were the people abroad who bought their products. These people were outside the range of English legislation. What they were willing to give for an English product must, in the long run, determine the price which the English manufacturer could get, the wages which he could pay, the taxes which he could bear.

CRITICAL CONDITIONS

The strain of these conditions brought English finance and currency to the breaking point in the summer of 1931. Even in 1929 it was estimated that the annual cost of social insurance, poor law relief, old age pensions, and workmen's compensation was about £180 millions (say \$900 millions) of which about

half was raised by taxation. It became constantly more difficult to devise taxes which would bring to the treasury the sum necessary to cover expenditures. Manufacturers in the exporting industries complained that the charges on them were so heavy that they were crippled in their efforts to find a foreign market. To their high wage bill they had to add a supplement, say 7 to 10% (2 to 3% of total cost) to cover local taxes and social charges. Not alone on this account, be it noted, but as a result of all the conditions together, both at home and abroad, exports declined in quantity and increased but little in value. Meanwhile imports continued at a high figure, greatly exceeding the exports in value. England faced now an actual deficit.

INTERNATIONAL BALANCE

The major items of the United Kingdom's international income and outgo are presented in the accompanying table for the year before and most of the years succeeding the first World War. The figures, necessarily based in most items on estimates, are given net; for example, the earnings of shipping give the freights due from foreigners after the subtraction of charges by foreigners for the carriage of goods on English account. The "other" items include tourist expenditures, the sale of old ships, film royalties, remittances (to missionaries, from emigrants, for example); under this head are included also payments on government account.*

The most significant column of the table is, of course, the last one, giving the excess of the credit items over the single great debit item, the excess of merchandise imports. England

* Gold shipments, included in an earlier table, are omitted here entirely; recent practice, particularly the earmarking of bullion instead of actual shipment, has destroyed their significance in an analysis of the income balance year by year. Even the inclusion of silver with merchandise sometimes disturbs the significance of the totals; cf *Board of Trade Journal*, Feb. 23, 1939, 142: 284, and see that and earlier volumes for a discussion of details. Fluctuations in "other" items were mostly the result of sporadic payments on government account, growing out of the war settlement, but for present purposes it has not seemed worth while to distinguish the government item.

Figures for 1937-38 were still provisional, and subject to amendment as the estimates were rectified.

As noted above *Eire* (southern Ireland) was not counted part of the United Kingdom after 1932.

before the first World War had been used not only to import goods to far greater value than that of merchandise exports, but even, after paying for them with "invisible" exports, to have still a large credit balance, which could be re-invested abroad.

BRITAIN'S INTERNATIONAL BALANCE, 1913, 1924-1938

(Figures in Millions of Pounds Sterling)

(a), Earnings of shipping. (b), Dividends and interest on long-term investments. (c), Short-term interest, commissions, insurance. (d), Other items. (e), Total of items above. (f), Excess of imports over exports, merchandise and silver. (g), Balance.

Year	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1913	94	210	25	10	339	145	194
1924	140	220	60	— 10	410	338	72
1928	130	250	65	30	475	352	123
1930	105	220	55	34	414	386	28
1931	80	170	30	24	304	408	— 104
1932	70	150	25	— 9	236	287	— 51
1933	65	160	30	8	263	263	0
1934	70	170	30	17	287	294	— 7
1935	70	185	30	8	293	261	32
1936	85	205	30	7	327	345	— 18
1937	130	220	35	6	391	443	— 52
1938	100	200	35	— 13	322	377	— 55

Conditions after the war showed a marked change. The country was no longer in the enviable position of having an assured large surplus. From 1924 to 1930, it is true, the balance was on the good side of the ledger in every year but one, 1926, when great strikes checked British exports, and gave a debit balance in commercial relations. The year 1928, figured in the table, made the best showing of any in this period. The favorable balance declined in 1929, the year beginning the world crisis, still more rapidly in 1930, and after that in most years gave place to a balance on the other side of the ledger. Revenues from shipping, from funds invested abroad, from the services of British bankers and business men, declined sharply, and were no longer sufficient to meet the bill for the excess of imports. Britain appeared to be living beyond its means.

Closely related to this condition were matters of credit and currency, in which difficulties culminated in the summer of 1931.

RETURN TO GOLD STANDARD IN 1925

England, like other countries engaged in the first World War, with the exception of the United States, had abandoned the gold standard. The government had stimulated the issue of paper money and the increase of bank deposits until the currency of the country, measured in units of the pound, had become greatly inflated. Prices rose, and the pound, quoted in a gold unit, fell from the normal exchange value of \$4.86 to \$3.18 (February, 1920), fluctuating later between those limits. Fluctuations of this sort were a serious disturbance in foreign trade, and menaced the position of London as the money market of the world; no one could tell what a pound would be worth a month or three months hence. The English were determined to return to the gold standard, making the pound exchangeable for a fixed weight of gold, and the only question was whether they should strive to return to the old par, £1 = \$4.86, or should accept conditions as they were and resume exchange of paper for gold at a lower rate, say £1 = \$4. Obviously the latter course would have lightened the immense burden of the national debt; the government would have paid to domestic bondholders (not to those in the United States, who held obligations payable in dollars) units which had shrunk in value. Considerations urging the other course, the return to the old par, were, above all, pride in the national reputation for fulfilling contracts, and then the fact that foreign assets held by the English were mostly payable in sterling, while the chief foreign liability, war debts to the United States, was payable in dollars. By determined action the government was able to bring sterling back to par in 1925, and resume the free exchange of gold for paper at the old rate. The reader should note carefully the reactions of this policy, because they reappeared, in reverse direction, when the country again abandoned the gold standard in 1931. Every increase in the gold value of the pound increased the difficulties of the English export merchant.

RESULTS

An American importer, offered a lot of textiles for £1,000, might be very glad to take them if he could buy the necessary

foreign exchange for \$4,000, might hesitate at \$4,250, might refuse at \$4,500. The English exporter could have lowered his price in sterling so as to keep his market, if his costs had declined proportionately. It was a critical feature of the situation that they did not. The major item in his costs was wages, and wages, which had risen in nominal amount with inflation, persisted at their former levels during deflation. Not only the disinclination of the individual to accept an apparently lower rate of pay, but also the insistence of labor organizations, the policy of unemployment relief, and all the political factors involved, made it impossible to bring wages into line with the prices which were fixed in the world market.

CRISIS OF 1931

Summarizing the situation presented in the summer of 1931, we find a country faced with a deficit in its relations abroad, and a government which was threatened with a serious deficit in its own finances. The failure of Austria's largest commercial bank (May, 1931) caused general alarm, "froze" the large amount of English credit extended in central Europe, and caused bankers to call home from England the funds which they had there. Gold left the country in large quantities. The Bank of England sought to meet this "flight from sterling" by large credits obtained in France and in the United States. The Labor ministry fell, and was replaced by a coalition ministry, still under MacDonald, which took the necessary measures, to balance the budget. In spite of all efforts, after more than £200 million in gold and deposits had been withdrawn, the government found it necessary to announce (September 20) that the Bank would no longer exchange freely gold for notes. In December sterling exchange reached a low of \$3.24½.

ELECTION OF 1931

The people were invited to pass upon the acts of their ministers in a general election held in October, 1931. The result was a sweeping defeat of the Labor party. Although they cast still some 7 million votes they were able to return only some 50 members to the House of Commons. The national coalition, including not only Conservatives and Liberals but also some

former adherents of the Labor party, had 554 seats, and of these the Conservatives alone held 471. This distribution of party strength promised to bring up for reconsideration the question of commercial policy, in which some elements in the Conservative party had been deeply interested for years.

GROWTH OF CUSTOMS DUTIES

England had never followed a policy of perfect free trade, if by that is meant the entire absence of custom restrictions. Such duties as were imposed before the first World War, however, were designed to bring in revenue to the government, and afforded no protection to home industries. The exigencies of the war and the abnormal conditions of the postwar period led to departures from previous policy. At different times and for different reasons duties were imposed on a number of articles, but no general tariff was established. The "McKenna duties" were imposed early in the war (1915) on motor vehicles, musical instruments, and clocks and watches, to maintain the rate of foreign exchange by discouraging the importation of foreign luxuries. Duties on silk were also designed to afford revenue by taxing a luxury. Another set of duties was developed to establish and maintain "key industries." The country experienced great difficulty after the outbreak of the war, from the lack of essential goods which it had formerly imported: synthetic dyestuffs and drugs, gauges, scientific glassware, hosiery needles, to give examples from a long list. The importation of these products was restricted, at first by prohibition, later by heavy duties (331/3 to 50%). Still another set of duties could be applied under the Safeguarding of Industries Act, of 1921, when it could be shown that an English industry was suffering from importation of competing products from a country in which a depreciated currency acted as an export bounty, or when the goods were being sold ("dumped") at a price below the cost of production to relieve the producers of surplus stock.

As a result of all these enactments, the British tariff in 1931 was a mixture of elements which suited neither the adherents of free trade nor those of protection. It has been described by saying that it was not a tariff wall, but a set of scattered and high spiked railings. The duties were high, but affected relatively

few commodities; less than 3% of the imports were subject to protection. The list was greatly extended as a result of the currency crisis of 1931; the government was given power to levy duties, practically prohibitory, for a limited period, to reduce imports and so maintain the exchange rate for sterling. Even convinced free traders acquiesced in this measure, which was deemed necessary to national security. The condition, however, may be described as one of unstable equilibrium, likely to change in one direction or the other, according to the play of economic and political forces.

PROBLEM OF PROTECTION

The policy of protection, which had been vigorously urged by a considerable group in the Conservative party ever since the time of Joseph Chamberlain, about 1900, was faced by a difficulty in the English situation which may not be immediately apparent to an American reader. The country could not possibly adapt itself to a condition of self-sufficiency. It had to import from abroad most of the food and raw materials that it required. It must pay for its imports by the services of banks and shipping, by drawing on dividends and interest due from abroad, or by the export of commodities. Of these three means of payment the first two were inadequate, and the third could be furthered only under special conditions by a protective policy. If the manufacturers who contributed most of the exports were not strong enough to market their products abroad, England's case was hopeless. A sale in the home market provided no means to buy the food which was needed for the subsistence of the people.

IMPERIAL PREFERENCE

The qualifying phrase in the previous paragraph, "under special conditions," must now be explained. Protection, to be effective, must be extended outside the home market to other parts of the world. If the countries making up the British Empire could agree to make their union not merely political but also economic, and could give the mother country such protection in their markets as would assure it an outlet for its exports, the problem would be solved. The self-governing British do-

minions (Australia, Canada, etc.) had, in framing their tariffs, given a preference to the exports of the mother country amounting on the average to about 9% ad valorem. After the war England allowed a corresponding reduction from the new import duties to many products of the Empire. A system of imperial preference was thus established. Under its operation, however, England still had to seek in foreign countries the market for most (about 60%) of its exports, still had to obtain from foreign countries most (over 70%) of its imports. So far as it had been carried the system of imperial preference promised no solution of England's problem.

PROTECTIVE TARIFF AND IMPERIAL PREFERENCE, 1932

Protection and imperial preference were not the issues which decided the election of 1931. The people who returned the overwhelming majority of Conservatives voted not so much for them as against their predecessors. But, by a "political accident" as it has been termed the new government was protectionist by conviction, and used its power, February, April, 1932, to pass acts which established a general tariff of 10% applying to all imports except certain classes of food and raw materials, and, further, established advisory committees to investigate and recommend additional duties. Britain had become definitely protectionist.

The new acts exempted from duty imports coming from within the empire, and offered at last substantial imperial preference. The mother country could now demand concessions from the dominions; the preference accorded them was temporary, and could be withdrawn if they refused. Agreements were signed at Ottawa, August, 1932, which established the principle of reciprocal concession in all the dominions except Ireland.*

Britain naturally desired a reduction of duties in her favor, and obtained this in Canada and New Zealand. In South Africa and Australia she had to be content with the preference resulting from an increase of duties on goods coming from without the Empire. From most of the dominions she received the assurance,

* A trade war with punitive duties was waged with Eire from 1932. to 1938, when that dominion also entered the fold.

for what it was worth, that their duties would be framed by non-political tariff boards, and that they would offer a fair opportunity for British goods to compete with products of their own industries.

RESULTS OF THE NEW COMMERCIAL POLICY

The tariff policy initiated by Britain in 1932 remained in force down to the outbreak of the second World War. In 1938 the free list included most raw materials, and most imports of whatever kind coming from within the empire. Nearly all other imports, including food, were dutiable. The rates were in general moderate, many of 10%, on manufactures commonly 20%, by exception 30% and above.

The administration of imperial preference in the spirit of the Ottawa agreements proved to be difficult. Manufactures established in the dominions fought for protection against British as well as foreign products; and the hope that "scientific" tariffs could be established, which would give the British a "reasonable" chance to compete in colonial markets, proved to be an illusion. Britain, on her side, found it difficult to reconcile the interests of domestic agriculture and of the home consumer with those of the colonial exporter. A series of commercial treaties, of which that with the United States, 1938, was the most important, gave evidence of a desire to seek a broader basis for trade than was afforded by the empire alone.

A table above shows for this period after 1930 the course of British trade measured in net values. Figures in the last chapter showed the course of the import and export trades, corrected for change of prices. To appraise the exact influence of the tariff policy on the development is impossible. It was but one factor among many. International trade in this period was so disordered by shifts in national productive organizations, by changes in currency and credit relations, by new tariffs, quotas and clearing agreements, that it is impossible to disentangle one influence from all the others. The conclusions suggested here by economic theory cannot be proved by reference to definite facts. We know what the course of trade was; we do not know just what it would have been if British tariff policy had been different.

Statistics give a definite picture of changes in the direction of foreign trade which attended the extension of imperial preference after 1932. Of imports retained in the country (not re-exported) Britain had been used to take about 27% in value from within the empire. The proportion rose immediately above 35%. In most of the years 1924-32 British exports to countries within the empire had been under 45% of the total. After 1932 the proportion rose very nearly to 50%.

Evidently Britain was very far indeed from imperial self-sufficiency, and even the approach toward it suggested by the figures in the last paragraph was subject to qualification. The British tariff and the Ottawa agreements were countered by reprisals in foreign countries. The proportion of Britain's trade with the outside world diminished as a result; the proportion of trade with British countries thereby rose; but branches of trade formerly profitable were lost. The indications were that in the long run Britain could maintain its standard of living only by the extension of trade, not by its restriction.

INDUSTRIAL RECOVERY BASED ON THE HOME MARKET

Returning from this survey of commercial relations to a study of internal conditions we find distinct evidence of recovery from depression in the years before the outbreak of the second World War. Comparing 1937 even with 1929, when activity was near its peak, we find a rise in the volume of industrial production of over 20%, a rise in the number of industrial employees of over a million, rising profits and wages. A check to this recovery in 1938 did not promise to be lasting.

The recovery appeared to be based on the home rather than the foreign market. Industrial exports lagged behind industrial production. The stimulus to exports following departure from the gold standard in 1931 lost force as other countries devalued their units. Old industries, which had lived in large part on their export trade, sought domestic purchasers. Steel, which had formerly left the country as exports or in ships, was kept at home, made into automobiles, into beams and girders, into arms and munitions. New industries developed to supply new wants or to supply goods which before protection had been bought

abroad: automobiles, airplanes, electrical apparatus and appliances, silk and rayon. The protection afforded by the tariff furthered these and other industries, but could not be held responsible for a great boom in the building industry, sheltered by nature from competition. This was helped by cheap credit; the Bank rate remained unchanged at 2%, 1932-39, and the market rate was still lower. Cheap food, a result of the world's overstock, afforded to consumers an opportunity to use surplus purchasing power for better shelter as well as for other things. Toward the close of the period the demands of rearmament gave added stimulus to activity.

How far the transformation effected in the British system of production, of commerce and of policy, would serve the country in war and in peace was left for the future to determine.

QUESTIONS

- What did the problem of demobilization involve?
- Why was its gravity not immediately apparent?
- In what regard were shifts in occupation unsatisfactory?
- What was the course of unemployment, compared with previous experience?
- In what industries and what period was unemployment worst?
- What was the condition of labor about 1900 compared with that in 1800, compared with an ideal standard?
- What was the effect of the first World War on the condition of labor?
- What was the attitude of labor, as regards efficiency in production?
- What different causes could be offered to explain unemployment?
- What different courses were open to a worker who lacked employment in his usual occupation?
- What general considerations would you suggest to explain the immobility of labor? What special considerations applied to England at that time?
- What turning points, in the history of labor in politics, were marked by the dates 1874, 1906, 1913, 1924, 1929?
- What were the elements of the Insurance Act, 1911, affecting unemployment; in what respects were its provisions extended later?
- Illustrate the burden of taxes.
- What were the conditions, and how were they met, in 1931?
- Can one say, downright, that the English policy was good or bad?
- What was the level of wages, judged from the viewpoints of the worker and of the employer?
- How could friends of the worker criticize the system?
- How did the conditions affect England's international balance?
- What were the most important "invisible" items offsetting the "un-

- favorable" excess of imports over exports? What surplus did they provide in postwar years?
- What was the lowest dollar value of the paper pound? What considerations were urged for and against a return to the gold standard at the former par, £1 = \$4.86?
- How did the return to the old par affect the export trades?
- What was the course of the currency crisis of 1931?
- What was the result of the general election of 1931?
- Distinguish different kinds of customs duties imposed during and after the first World War.
- Explain the difficulty of applying the principle of protection in England. How could the difficulty be met by applying protection to the British Empire as a whole?
- Why was a protective tariff adopted in 1931, and in what form?
- What preference was given by the Ottawa agreements?
- What was the outcome of the Ottawa agreements?
- What was the effect on trade of tariff and preference?
- What different factors contributed to economic recovery?

READING

Siegfried's books, to which reference has been given above, do not extend beyond 1931. The whole period, 1914-39, is well covered in G. P. Jones and A. G. Pool, *A Hundred Years of Economic Development in Great Britain* (N. Y., 1940), part 3. For unemployment and relief the student may consult E. W. Bakke, *Insurance or Dole?* (New Haven, 1935). Frederic Benham, *Great Britain under Protection* (N. Y., 1941), offers an excellent account of commercial policy. Periodicals, notably *The Round Table* and *Foreign Affairs*, offer abundant material on most of the topics. Eric V. Francis, *Britain's Economic Strategy* (London, 1939), also is useful.

- Industry and unemployment. (Jones and Pool, chap. 14, pp. 279-305.)
- Condition of labor. (Jones and Pool, chap. 19, pp. 386-402.)
- British politics after the first war. (Siegfried, *Britain*, pp. 223-249, *Crisis*, pp. 139-154.)
- The political parties. (Siegfried, *Britain*, pp. 250-287.)
- The election of 1923. (Siegfried, *Britain*, pp. 287-305.)
- The balance of trade. (Siegfried, *Crisis*, pp. 99-118.)
- The currency. (Jones and Pool, chap. 18, pp. 367-385; Benham, chap. 6, pp. 149-162; Siegfried, *Britain*, pp. 29-43, 168-177.)
- The tariff. (Siegfried, *Britain*, pp. 9-29; Benham, chap. 2, pp. 25-45.)
- Imperial preference. (Siegfried, *Crisis*, pp. 181-205; Benham, chap. 4, pp. 71-109.)
- Protection other than by tariff. (Benham, chap. 3, pp. 46-70.)
- Agriculture. (Siegfried, *Britain*, pp. 148-163; Jones and Pool, chap. 16, pp. 324-348; Benham, chap. 8, pp. 202-217.)
- Economic recovery. (Benham, chap. 9, pp. 218-242.)

CHAPTER XIII

France to 1789

Anyone who would understand contemporary France must carry his study of the country back at least as far as the eighteenth century. "Our peasants and artisans both come from the Middle Ages, and deep heart searching reveals that every essential of our character already existed at the time of the Revolution of 1789." This is the judgment of André Siegfried, a Frenchman who knows his own country the better by reason of careful studies which he has made of other countries.

In the eighteenth century England made its start in the new path of industrialism in which it was to remain so long the leader. In that same century France was set in a mould of a different shape, of which, indeed, the outlines have slowly changed, but in which features have persisted down even to the present day.

PRIMACY OF FRANCE BEFORE 1800

In the eighteenth century France counted not only as the most powerful but also as the richest country of Europe. Of its military power the position of Louis XIV at the beginning of the century, of Napoleon at its close, was significant. In area it did not match the young state of Russia, but its fertile soil, its favorable climate, and its advantageous geographical position made it the envy of other countries, and in the size of its population it was supreme. Even in 1700 France had a population of over 20 million, not only exceeding that of any other country, but amounting to nearly two-fifths (38%) of the estimated total of the "great powers" in Europe at the time. Even in 1789 the French population counted one-quarter of the total of the six great powers, one-sixth of the total estimated population of Europe, and not until after that date did France cease to be, in number of people, the leading state of the western world.

In a period when international rivalry was sharp and wars were frequent the wealth as well as the power of countries was commonly measured in totals, and by that measure France stood at the head. If we make our standard not the aggregate but the average, the result is very different. France as a whole led the world, but the ordinary Frenchman had reason to envy the inhabitants of many other countries. Not only was the aggregate wealth or income divided among more people, but, as will appear, it was so distributed as to leave to most of the people very little on which to live.

INFERIOR POLITICAL ORGANIZATION; RELIGIOUS DIFFERENCES

France was weak not in its resources, physical and human, but in its organization, in the institutions which determined people's activities. It was particularly weak in its political organization. France did not take its present shape until the very end of the Middle Ages. In the fifteenth century Burgundy, bordering it on the East and nominally subject, had grown so strong that it threatened to make of itself one of the great states of Europe. Louis XI, Louis the Cruel, so called because of the ruthlessness shown to his enemies, forestalled that danger and began the process of welding the feudal fragments of the country into one whole. So great was the area of the country, however, and so sharp the diversities existing within it, that the process lasted through the whole modern period and was still incomplete at its close, when the French Revolution accomplished in a few years a unification which had resisted the efforts of previous centuries.

Wars of religion, in the half-century preceding 1600, threw the country back into a condition characteristically medieval—capital wasted, brigandage rife, people dying of starvation. When truce was declared Catholics and Protestants still remained separate and hostile, as in two armed camps. Finally, in 1685, the toleration granted to the Protestants was withdrawn (at the instance of the servile Gallican church, not of the Pope), and they were forced to abjure or conceal their religion or leave the country. The estimate that 400,000 Huguenots emigrated may exaggerate the number, but any reduction of the number would be more than offset by allowance for the quality of those who

left. Like any large group they included diverse elements and some who had joined their cause for political advantage, but in general they were a select body, independent, courageous, industrious, thrifty. "Rich as a Protestant" was a saying of the time. France lost far more in their persons than in the capital which they took abroad. French officials reporting on the condition of industry a few years later were unanimous in the opinion that it had declined as a result of the expulsion. The Protestant countries of northern Europe, England, Netherland, Prussia and others, gained what France lost. Characteristic of the blindness of French policy is the fact that the very year after the expulsion an edict was published encouraging Protestant merchants to enter the kingdom. There was retribution in the fact that three regiments of the Brandenburg army were made up of refugees, and that much later French names appeared high up in the Prussian army command.

LACK OF REPRESENTATIVE INSTITUTIONS

Political unity was achieved by destroying all elements opposing the power of the king. There was not time for constructive work which would have salvaged medieval institutions designed to effect a broader distribution of political power. As a representative body France had inherited not the two chambers of the English parliament but the form common on the Continent, an Estates General with three separate chambers for the clergy, the nobility, and the third estate, the people. The estates still represented class interests; they had never been welded together to acquire the national point of view. The nobles were angry when the estates were compared to three brothers; they thought of their relation to the third estate as that of master and valet. When the Estates General met in 1614 the clergy were interested only in the independence of the church, the nobles only in pensions and tax exemptions, the third estate (composed largely of officials) mainly in the heredity of offices; each estate sought to advance its class interests, and opposed the claims of others. When they had finished their deliberations and presented their proposals they were dismissed without any action taken. They asked to be called again in ten years and waited 175, when they met at Versailles to take the oath of the tennis court in a very

different temper. At the time little notice was taken of their disappearance. They were not missed.

ABSOLUTISM

The third estate, jealous of the influence of other classes, actually proposed in 1614 that the king should proclaim himself absolutely sovereign, with power subject to no limitation on earth. This ideal was realized shortly afterward, when Richelieu swept away all sources of opposition. In the same century in which absolutism was checked in England it was fastened on France, to last until 1789. The saying ascribed to Louis XIV—"The state, I am the state"—does not rest on historical evidence, but represented the facts.

In the practice of absolutism the personal qualities of the ruler were obviously of decisive importance. The theory that the king was the choice of God assumed that God chose the best man. In the whole line of French kings, during the last two centuries of the monarchy, only two could be named who measured up to the responsibilities of their position, Henry IV and Louis XIV. If Louis "the Great Monarch," "the Sun-King," ruined France by his wars, at least he worked hard at his trade and took it seriously.

When Mazarin died, the minister who had ruled during the minority of Louis XIV, and people asked Louis to whom they should then address themselves, they were surprised by his constant reply, "To me." They were not used to a king who ruled as well as reigned. The sovereign was commonly unwilling or incompetent to conduct the serious business of government. When he was both willing and competent he had necessarily to leave the immense detail of his office to subordinates. The combination of all executive and all legislative power in one person forced delegation of authority. In the shadow of the throne were the people who actually ruled France.

MINISTERS OF STATE

Some great names appear among the French ministers of the period—Sully, Colbert, Turgot, to give some striking examples. The difficulty of their position is illustrated in a letter which

Turgot wrote to the king when he assumed office. "I shall have to oppose the generosity of Your Majesty, and of the people who are the dearest to you. I shall be feared, hated even, by the largest part of the court, by those who seek favors. The people to whom I shall sacrifice myself is so easily deceived that perhaps I shall incur its hate. I shall be calumniated, and perhaps so successfully as to destroy the confidence of Your Majesty." A royal minister had not only to serve the country; he had to please the king, and defend himself constantly against backstairs intrigues in the royal palace. Under Louis XIII power was exercised by a Florentine adventurer, Concini, who married the daughter of the queen-mother's nurse, and so had the influence to displace the great Sully, and make himself a multimillionaire at the public expense. Concini, in turn, was displaced (assassinated) by the king's falconer, Luynes, who knew nothing except about dogs, horses and hunting, but took the highest offices in the kingdom and founded a ducal family. Richelieu attained office by intrigue, and maintained himself against intrigue (*Day of Dupes*, *Cinq-Mars*). During the minority of Louis XIV, for nearly twenty years, France was ruled by an Italian, Mazarin, who kept power by his personal influence with the queen-mother, a Spaniard. Louis XIV distrusted people abler than himself, and came finally to be served by mediocrities, or by people clever enough to appear more dull than he. Louis XV would reject a candidate because he stammered or because he made bad jokes, and commonly left the choice of ministers to his mistresses. Changes were rapid; one minister, Silhouette, was in power just long enough to add a new word to the language. For more than ten years the royal mistress herself, the Marquise de Pompadour, was practically prime minister. Turgot was dismissed from office because of the personal opposition of the queen, Marie Antoinette, angry because a friend of hers had not been favored by him.

These may seem petty incidents to be detailed in a history of economic development. They were of first-rate economic importance, in the suggestion to be confirmed later in the book, that France lacked in this period a government devoted to the national interest, and able to guide it in a wholesome course.

WARS; WASTE

France was too large to be governed effectively with the simple means available at the time. It was not large enough to suit the ambitions of its rulers. They coveted the territory of neighbors across a vague frontier, and engaged the country in wars which were fruitless whether they were won or lost. These things, of course, are matters of political history, and for details the reader must be referred to other books. There is not space here even to describe the institutions of government, and to show their faults. Reference will be made to them from time to time, but at this point only one aspect of the French political system will be treated, its finance. The main cause of the low standard of life of the average Frenchman was a fiscal system which drained the resources of the class of economic producers, and gave them to a class, economically sterile, to be wasted. To keep the nobility out of mischief Louis XIV engaged them in the ceremonies and pleasures of the court at Versailles, where the great palace, pleasure grounds and water works were constructed with funds wrung from a needy people. A considerable fraction, perhaps a tenth, of the total public revenue was spent for the maintenance of the royal household, which counted by the thousand the retainers in the different services, hunt, chapel, kitchen, cellar, and so on. An appointment with a nominal salary returned a handsome income by reason of the perquisites attached. In the army more than half of the money spent for pay went to the officers, who led a life of Persian luxury while the common soldiers, tricked or forced into the service, were in an utterly wretched condition.

FISCAL SYSTEM

Economists are now agreed that capacity to pay taxes does not vary directly with a man's income, but that the rich can afford to pay a higher proportion than the poor. In accordance with this principle of progressive taxation the poor man is exempted from any direct tax, paying only a moderate amount in indirect taxes on the luxuries which he consumes, while the wealthy man may pay one-quarter, one-half, or more of his income. In contrast to this principle the ruling classes in France had so ar-

ranged that the taxes were sharply regressive: the poor paid in taxes a much higher proportion of their income than did the well-to-do. The situation will be illustrated by a description of two taxes, the gabelle and the taille.

THE GABELLE

The gabelle was a salt tax. The government monopolized the sale of a necessity of life, and thereby forced all the people, even the poorest, to contribute to its support. Everyone needs a certain amount of salt to maintain health; no one cares to consume much more than that. In effect, therefore, the salt tax is a poll tax, imposing on people of all classes an equal burden. It is sometimes necessary, under primitive political conditions (as in recent times in British India), but it is always oppressive and bitterly unpopular. In France the tax was heavy; an Englishman estimated that the salt for his family cost 28 times as much in France as in England. It was unequal; in different parts of France half a dozen different rates were levied. These differences led to an immense amount of smuggling; every year there were thousands of searches and seizures, and hundreds of people were sent to the galleys. It was inconvenient; people had to buy their supply at warehouses open only twice a week, and had to buy a year's supply at one time, even if that forced them into debt. The government exempted favored classes from the tax, but forced the common people to buy a certain amount per head, forbade them to use salt water from the sea or from springs, and would not even let them without express permission use an excess above the needs of the kitchen for curing pork. The yield was large, and the government could not dispense with the tax, but it had to support such an army of officials to prevent and punish evasion that it spent 20 millions to collect 60 millions.

THE TAILLE

The taille (from the Latin *tallagium*) had been established as a royal tax in the fifteenth century, to be paid by the common people for the support of the army. The upper classes in this period were still bound to military service, so it was fair that they should be exempt, but in the course of time they were re-

lieved of duties while they maintained their privileges, and the working class continued to pay the tax. In the larger part of France the government fixed each year a sum which it hoped to be able to collect, arbitrarily apportioned this sum among provinces and then among villages, and left the village to raise its quota as best it could. Many features of the system resembled that current in Russia before the first World War. The village tax collectors were allowed a percentage on receipts, but undertook a difficult and even dangerous office. "The post of collector often drives its incumbent to despair, and nearly always ruins him," said Turgot. The best men shunned the office, even paying for dispensation to be relieved of it; it fell to the ignorant and inexperienced, with little to lose, who often sought their profit by corrupt bargains. If one villager did not pay, the others had to make up the deficit, but there was no fixed standard, in land or income; everyone hung back, paid as little as he must, evaded payment if he could, delayed it as long as possible in any event. Not only were the nobles and clergy exempt for the most part from this tax; the system was riddled with privilege and favor, and many of those theoretically subject escaped from their obligations.

TAX FARMING

The burden of taxation was immensely increased by the method of collection. The government lacked an administration whose honesty and efficiency it could trust. Instead of collecting taxes through its own agents it entered into contracts with private financiers, tax farmers as they were called, who undertook to collect the tax on terms which promised them a profit. Commonly they bought the right to collect a certain tax for a lump sum which they advanced, and kept the surplus above this amount for themselves; sometimes they shared with the government the excess above a stipulated total. They relieved the government of the expense and odium of collecting the tax, but made the people pay dearly. Adam Smith asserted that taxes were being collected in England at a cost under 5% while in France when the people paid 24 millions not over 12 reached the public treasury. This estimate has been accepted by later investigators, and serves at least to indicate the waste of the sys-

tem. In individual cases the gains were scandalous: Laffemas (about 1600) asserted that tax farmers leased the customs duties for 100,000 crowns and levied a million. Tax farmers became multimillionaires. Some distinguished people belonged to this group (Helvétius and Lavoisier, for example), and one of the major faults of the system was the attraction it exercised for able men, who under different conditions might have made their fortunes by serving the public instead of by exploiting it. Even though this system of collection was not applied to all the taxes, it increased very seriously the burden which the people had to carry.

BURDEN OF TAXES

The weight of that burden can be indicated, if not precisely measured, by Taine's estimate of the payments imposed upon a peasant in the eighteenth century. He would have us believe that for every 100 francs of income the peasant had to pay 53 to the collector of the direct tax, 14 to the noble landlord, 14 to the church for tithes, and still had to pay indirect taxes from the residue of 19. Frankly, a condition as bad as that, applying to the great mass of the people, is incredible. More conservative estimates would make the taxes absorb a third or a half of the peasant's income. All that can be said with certainty is this: that the taxes took so much as to leave only a bare living for many of the people, and in some periods not even that. Between 1700 and 1789 the population grew from 21 to 26 million, evidence that people could not only live but multiply under conditions as they existed. Yet there were periods of famine in which the population of the whole country or of considerable districts declined, and throughout the century the standard of living remained desperately low. In later chapters the condition of the Russian peasants in the nineteenth century will be described in some detail, and the reader will realize how sorry is the lot of a neglected agricultural population under an inefficient and burdensome government. Most of the significant facts detailed there can be matched in France of the eighteenth century. In France, however, the uglier facts represent rather the extreme, the limits to which misery might go, than conditions typical of the mass of the people.

AGRICULTURAL CLASSES

When Arthur Young traveled in France, just before the Revolution, he was struck by the predominance of the small holding in the agriculture of the country. This was a period in which, in England, the large estate and the large farm were growing up at the expense of the class of small freeholders; in contrast to English conditions France appeared to Young to be a land of peasant proprietors. Many of these small cultivators, however, did not own the land they worked. In the mixture of rights which resulted in France from the decay of the old manorial institutions it is sometimes difficult to determine who should be regarded as the real proprietor, the lord or the cultivator; members of each class had certain rights and were subject to certain restrictions.

Relatively few of the country people were in the position of the English agricultural laborer of the later period, lacking altogether a right to land, however small a bit it might be. Many of them had to spend part of their time working for others, but a considerable proportion had rights of some sort to land sufficient for their support. A large part, in some regions the larger part, of the land was in the hands of petty cultivators who can be regarded as practical proprietors, true peasants, although they had to recognize the overrights of some lord.

LAND TENURES

The land tenures of France in this period may be characterized by saying that they were much more old-fashioned than those of England. Many more remnants of an earlier period persisted. Even the small proprietors who came closest to the condition of the English freeholders, who could transfer their holdings freely and will them to heirs, were bound commonly by some obligations to the lord of the neighborhood. At the other end of the scale were the country people still subject to *mainmorte*, the rule of the dead hand. They could not will the land they held even to their own children, unless these lived with the parents, and they had to submit to a right of the lord to a part of the estate. In eastern France, where they were most numerous, they constituted a lower class, not eligible to public office and unable to testify in cases in which their lord was concerned unless there were no

other witnesses. The lord had in theory even a "right of pursuit" if they left the land, but this became purely formal, and was abolished before the Revolution.

The very fact that a relatively small proportion of the country people lacked altogether the possession of land prevented the development of large farms such as grew up in England in the eighteenth century. In the three centuries before the Revolution members of the upper and middle classes did make large additions to the land under their control. With a powerful interest in the courts which decided property rights they managed to get title both to common lands and to lands in the possession of individual cultivators. They did not themselves usually administer the cultivation of their estates. They could not rely on a rural proletariat for a supply of labor; the estates were commonly composed of scattered fragments; rural life, away from the town and the court, did not appeal to their tastes. The large estates were often put in the hands of middlemen, who sublet them in pieces to petty cultivators, and undoubtedly Arthur Young often mistook these small leaseholders for peasants, owning the land on which they worked.

Alongside the lease was another form of tenure which played no part in the later history of English agriculture, but which became common in France in this period, and in some parts, especially in the south, was predominant. This was share-cropping, called *metayage* in France because the crop was usually equally divided. There will later be a discussion of this tenure, which persisted into the nineteenth century. In general it may be said that it was a tenure based on custom, indicating usually poverty of capital, and marking backwardness in the European development. Neither landlord nor tenant had the incentive to the investment of capital, the improvement of methods, or the introduction of new crops which a contractual arrangement would have afforded.

BACKWARD IMPLEMENTS AND METHODS

In the latter part of the eighteenth century improvements were effected, particularly in the north; artificial grasses were introduced, and the yield of the land was increased. But Arthur Young, traveling in France just before the Revolution, was

shocked to find backward methods of agriculture so widespread as to characterize the country as a whole. He described methods and implements as those of the early Middle Ages. Wooden plows, like Virgil's, merely scratching the soil, were common. Hay was mowed with scythes, grain with sickles, of a shape sanctified by centuries of tradition. Carts were small and clumsy, constructed with the minimum of iron. In considerable districts the land was cultivated by methods still more primitive and less efficient than those of the regular three-field system. In some regions a two-field system was common; in some only one-third or less of the land was sowed with crops, and this land was then given not one year but several years in fallow, to recover its fertility. Large tracts of land had been so far exhausted by the crude methods of cropping that they had been abandoned, to grow up in weeds and brush. Leaving aside the most northern provinces, where the agriculture was really good, the yield of cereals was at most 7 to 1, in the center and south only 4 or 5 to 1. In general the yield was estimated to be less than half the English, measured with respect to seed, not much more than half measured by the crop per acre. The characteristic fault of primitive field systems, the lack of fodder for farm animals with a resulting lack of manure, showed itself in an aggravated form, particularly as the nobles coveted the common pasture, and restricted its use by the people. The raising of cattle and sheep declined so that there was a dearth of meat, milk, leather, and wool. These were the conditions resulting from persistence in outworn methods. A reform was difficult not only because of the ignorance of the people and a lack of effective leadership, but also because the needed capital was absorbed and wasted by a bad government, and the incentive to progress was damped by the fear of the tax gatherer.

THE NOBLES

In the eighteenth century, says Tocqueville, "in England the only exemptions from taxes were enjoyed by the poor, in France by the rich. There the aristocracy had assumed all the burdens in order to enjoy the power of governing; here they steadily refused to pay taxes, as their only consolation for the loss of political power." The nobles had been in France a serious menace to the authority of the crown, but in the seventeenth century their power

had been broken, and the leaders were reduced to the position of courtiers, wasting their time amid the splendors of Versailles while others attended to the work of government. They kept their privileges after they had abandoned their duties, and became a dead weight on the society which carried them. Some of them enjoyed princely revenues, not so much from the land they owned as from the salaries and pensions drawn from the public purse. Most of them were poor, and found it difficult to maintain the position even of simple gentry. In Brittany "there is a crowd of gentlemen cellar-rats on the farms," one family, living on black bread, "attests its nobility only by the dove-cote"; in Burgundy a gentleman might dress like a peasant, but would carry a rusty sword under his arm, and would die of hunger rather than work. A French author of the time described the farms owned by these poor nobles as worked on shares, badly cultivated, lacking stock, rendering poor harvests for which a creditor always was waiting, and described the noble family as living in a château so tumble-down as to be a menace to life, without education, united only by regret for their condition.

BURDENS ON THE CULTIVATOR

The medieval rights of the landlords had declined constantly in money value, but persisted in many cases, to the injury of tenants and of the whole society; the people lost far more than the lord gained from them. The lord's monopoly of baking, for example, required the people to come to his oven for their bread, imposing on them the difficulties of distance and delays in time, and exposing them to innumerable petty exactions. Hunting had been at one time free to all, and in some places had been a service expected of the lord, a duty rather than a pleasure, demanded by the tenants for the protection of their crops. As game became scarce the condition was reversed. Nobles monopolized the right to hunt, and used the people's crops to feed the game; the people could not weed or cultivate at the proper time, could not keep dogs, could not kill pests. The noble monopoly of the dove-cote, whose pigeons fed on the peasants' crops, was a similar abuse. A good illustration of the relative profit and loss of these customary rights is furnished by the case of the champart, the right of the lord to part of the crop, exercised under various forms in different

regions. In one place it amounted to one-twelfth of the crop, but the lords demanded of people who would be free from it a sum amounting to one-third of the value of the land. The former proportion measured the gain to the lord, the latter the loss to the people. The lord could keep the crop standing in the field until his agent came to check his share, and could require that to be carried to his barn first, while the rest might spoil. The noble class sought in general to give as little and to get as much as it could, to exploit every privilege to gain a money return.

CONDITION OF LABOR

Over against the privileged class in the country districts stood the mass of the people, the workers who actually cultivated the soil. Their condition, as said above, has been compared to that of the Russian peasants about 1900. Arthur Young thought them considerably worse off than the same class in England. He was struck by the fact that the country people wore neither shoes nor stockings. They had to sell the best of their grain to pay their dues and taxes, and ate inferior grades of rye or oats and barley. Many of them lived in mud huts, lacking stove and chimney, separated only by a few planks from their pigs and chickens. Even those who were better off rarely had glass window panes. Conditions varied in different times and in different places. The ebb and flow of population furnishes really the only simple index by which the economic efficiency of France as a whole can be measured. Tested by that measure France lacked in some periods enough food to go around, in other periods had a surplus which permitted a growth in the number of consumers. To a large extent the country was at the mercy of the seasons. A succession of good years enabled more babies to be brought to the age at which they could contribute to production; a series of bad harvests cut off the weaker fringe of the population. Next in importance to this great variable was the fluctuation of royal finance, which left to the people for their subsistence a larger or smaller share of what they had produced. Of any general and considerable improvement in the standard of living there is no evidence. The condition of the working class accorded pretty well with the economic theory of the time, that they got a bare living and no more.

CONDITION OF MANUFACTURE

Of manufacture, as of agriculture, it may be said that the French organization was much more old-fashioned than the English in the earlier part of the eighteenth century, and lacked almost entirely the sweeping changes which revolutionized the English organization in the latter part of the century.

In technique, the knowledge of processes, the French were regarded as distinctly superior. Their nearness to Italy, a contact which was made more effective by political and military connections, gave them a distinct advantage. Manufactures of a finer sort had first developed in the communes of northern Italy, and spread from there to countries north of the Alps. Nor were the French inferior to other peoples in their capacity to learn and ability to improve. In the description of the English conditions reference has already been made to the technical competence of the French, and the topic will be again discussed later.

France was at least the equal of other countries, and was superior to most, in its endowment of raw materials for manufacture, in the period before coal became the most important item. In its supply of wool and of some metals of minor importance (tin and lead) it was behind England, but in its stock of other materials of manufacture it was counted among the richest states of Europe. Even as regards a market for its manufactured products France had some advantages. The mass of the people, it is true, were desperately poor, and the broad market on which machine industry was later to be built up did not yet exist. Yet this was true also of other countries while the very vices of the French fiscal system provided in the upper level of society an affluent and extravagant class of purchasers, eager to have the best and willing to pay high for it.

France did not lack resources, either physical or human, but it did lack an organization, a system of cooperation, which could develop these resources effectively. Bad politics and bad policy wasted the resources which were available.

DIVISION OF HOME MARKET

The French government was too busy with foreign affairs to set domestic affairs in order. It did not even provide for an effective

use of its natural resources by establishing freedom of trade within its borders. Not only did regular customs frontiers persist within the national boundary, separating one group of provinces from another, but even the local tolls, established in the Middle Ages on rivers and highways, continued to hamper exchange. A shipment down the Seine had to pay 15 different tolls between Paris and Rouen; the course of the Loire was cut by 28 tolls between Orleans and Nantes. Tolls on roads prevented escape from the waterways, and French roads at best were bad, no better than the English, until well into the eighteenth century. Iron manufacturers complained not only of the dues which they had to pay for the right to transport on the rivers, but also of the resulting delays, which sometimes kept them past the time of high water and left their vessels stranded.

Colbert aimed to suppress the tolls on roads and rivers, but had little success; most of them persisted until they were swept away by the Revolution. In a reform of the internal customs tariffs he accomplished more. The third estate at its last session had demanded the abolition of the internal customs frontiers, and Colbert's tariff of 1664 did at least establish freedom of trade within the provinces of northern France. Other provinces of the kingdom still maintained their tariff boundaries. They were "reputed foreign," and wares passing between them and northern France had to pay duties. Other provinces added later to the kingdom were "foreign in fact"; they traded freely with foreign countries but made no part of the French commercial system.

GILDS

Gilds, established in the Middle Ages, when manufacture and trade were necessarily local affairs, and in that period natural and wholesome institutions, were allowed to persist into the modern period, when they had outlived their usefulness and represented only obstacles to progress. Not only did the government permit them, it actually fostered and increased them. Here again we see the result of bad politics. The government wanted money, it was not able to develop an effective tax administration of its own, it used the gilds as tax gatherers and granted them monopoly privileges in return for their fiscal services. So in the very period when England was being prepared for the new era of free competition

and large-scale manufacture France was being more tightly tied to the antiquated institutions of local privileged industry, conducted on a small scale. Even so great a statesman as Colbert was forced by the need of money for the wars of Louis XIV to further the gild organization as a means of collecting taxes. In 1673 he revived a law which required all merchants and artisans in all France to enter gilds. He planned to create 38 new gilds in Paris, including masters of small schools, renters of furnished rooms, sellers of imitation diamonds, tripe sellers, and so forth.

The gild was the common but not the universal form under which industry in France was regulated before the Revolution. Some provinces (as Lorraine and Champagne) escaped in large part from gild regulations, some towns (as Limoges) were known as free communes, in which anybody might exercise any trade. Even in Paris there were islands of freedom, for example the cloister of the parvis Notre Dame, under the shadow of the great cathedral. While the government sold the right of monopoly to some, it sold or gave to others dispensation from this monopoly, as will appear. Yet in general the gild was the characteristic institution determining the form and spirit of French industry in the eighteenth century.

GILD POLICY

The very soul of the gild was the maintenance of a traditional standard. In technique there must be no departure from time-honored processes. In making and marketing there must be no opportunity for one man to rise above the others, so menacing the traditional equality of the masters of the gild. If this principle had been carried out completely, French industry would evidently have been bound to the handicraft system, and the largest unit would have been a little shop with a few journeymen and apprentices working under the eyes of the master. Even the system of the merchant employer would have been impossible. Actually there were many departures from the strict code of the gild, but they were opposed to the spirit of the time, and were achieved commonly only by the exercise of some political influence. A serge manufacturer at Lille got from the central government the privilege of working 20 looms, that he might try certain experiments in making the goods, but the magistrates of the town

protested vigorously, asserting that the industry would be ruined if a few powerful manufacturers could thus expand their operations. Limitations on the number of machines and number of laborers under one master were a natural and logical part of the gild system; the rule at Lille limited the serge-maker to 6 looms, at Lyons the silk-maker was limited to 4. Shops did tend to grow in size in the course of the eighteenth century, and before its close examples could be found of master manufacturers employing 20 to 100 workers, but these large shops were relatively rare.

While the gild system was, on the whole, effective in repressing the development of larger and more effective industrial units, and so was an economic hindrance, the social ideals which it represented were very far from being realized. The system was riddled with favor. Promotion from the lower ranks of apprentice and journeyman to that of the master depended not on personal merit but on family relationship or money. The mass of the industrial workers were destined to remain wage laborers, earning a bare pittance throughout their lives. To defend their interests they organized unions, *compagnonnages*, secret societies with an elaborate ritual, which fought the gilds, the employers, and even each other.

INFLUENCE OF THE GILDS

A French student of the subject asserts that only two classes suffered much from the rule of the gilds: workmen in a trade which was capable of development by the investment of capital, and persons who had saved capital which they would have liked to invest in a trade reserved to the members of some corporation. A believer in the power of capitalism as an agent in industrial progress might well ask if this judgment is not sweeping enough to condemn the French gilds of the eighteenth century. To particularize in this way, however, seems to underrate the broad influence of the gild spirit in the society of the time. It was opposed not merely to the capitalist, it was opposed to the individual, in whatever rank of society he might find himself. It put the idea of the corporation above that of the individual; it regarded as perfect the society of the time, in which each man had a place which he must keep. French society of the time was very far from perfect. A man's place was fixed far too much by the accident of

birth, far too much by political favor, far too little by his personal merits, by the contribution which he might make to the general welfare. French society needed the dissolvent of an active, stimulated individualism. It got that, in political affairs, in the French Revolution. It has never had it in social and economic affairs, down to the present day, in such measure as England and Germany and the United States have had it.

RESISTANCE TO PROGRESS

In a society sorely needing reform the guilds were an organized force opposing any change: that is the general indictment against them. They fought against efficiency embodied in production on a large scale. They fought against improvements in products and processes. The manufacture of lacquered metal could not be started because it cut into the territory of several established guilds; colored paper was manufactured against the opposition of the guilds of the engravers, of the printers, of the upholsterers; pianos were hunted down by the makers of musical instruments previously current. It would be easy to add many more such examples of the guilds' blight on progress.

GILD QUARRELS

When the guilds were not fighting innovators they were commonly fighting each other, contesting the monopoly of different parts of the field of industry. In this regard France suffered much from the multiplication of guilds by the government for fiscal reasons. There were 6 different guilds of upholsterers. At Amiens there were 9 distinct corporations engaged in the manufacture of different woolen products. Seamstresses were given the monopoly of women's underclothes, tailors of their outer garments. Milliners were separated from cap makers and feather workers. At Amiens barbers had a monopoly of surgical operation, but were not competent to undertake such a serious operation as lithotomy, which was performed by specialists who paid 5 cents to the barbers' guild on each occasion. The manufacture of buttons belonged to one guild or another according to the material of which they were made, horn, metal, cloth, and so forth. Tailors began to make them, to suit the button to the garment, but the other guilds protested, and had men arrested on the street if they were

wearing outlawed buttons. The conflict between tailors and second-hand clothes dealers, already centuries old, was maintained. The bakers and the pork butchers fought the cabaret keepers. The flower sellers fought the bouquet sellers.

ATTEMPTS AT REFORM

From time to time, in the eighteenth century, the government endeavored to restrict or to suppress the guilds. Turgot, one of the earliest of modern economists, used his power as minister in 1776 to issue an edict abolishing all the trade corporations except those of the barbers, druggists, goldsmiths and printers. The edict was refused validity by the Parlement (a court) on the ground that it would overthrow society by abolishing the necessary distinctions and gradations, in which each man found his place. Some of the old guilds were abolished but new ones rose to take their place. The guilds were too characteristic a part of the old régime in France to be thus easily done away with. Like the government itself they were in financial difficulties, partly from the burdens laid on them as agents in taxation, partly from the costs of the constant litigation in which they were engaged. Most of them were burdened with debt and many became bankrupt. Like the government they strove desperately to maintain the position of privilege which they enjoyed. Not until the convulsion of the French Revolution were they finally swept away.

NATIONAL REGULATION

While the restrictions on manufacture imposed by the guilds were a very serious obstacle to industrial progress in France in the eighteenth century, they were not the only one. The central government, as well as local bodies, assumed the responsibility of telling the people what they might make and how they might make it. In this period there was a faith in the power of the state which seems almost childish in view of the actual weakness of the public administration. Not in France alone but also in England, Germany, and in fact everywhere in Europe the governments were attempting to direct the course of enterprise. France, however, suffered more than other countries in that the industrial regulations were less intelligent than the German, were more extensive, and were maintained much longer than the English.

Colbert, the minister of Louis XIV, published a great code of regulations, which attempted, particularly in the matter of the textiles, to lay down rigid instructions for manufacture throughout the kingdom. He was an early apostle of standardization, too far ahead of his time. He said that merchants and manufacturers were always wanting for some small profit to change length, width, quality, "which tends to the complete ruin of manufactures, of which the principle consists, in a state as great and as flourishing as this, in making them always equal in length, width, and goodness." His instructions on dyeing included 317 articles, designed not only to regulate but also to educate the dyers of the country. A recent student of his work (Cole) says that from his death in 1683 "to the inauguration of the five-year plan by the Soviet government in Russia, no conscious and directed effort to develop a nation's industrial life was so prolonged, so thorough, so permeating, so far-reaching, as that of Colbert."

Colbert was well informed, highly intelligent, an effective administrator. Successors less wise than he extended the restrictions until they became a net from which escape would have been impossible if the government had been able to enforce them or had not itself provided means of evading them. From 1720 to 1760 more than 300 edicts were issued, regulating in minute detail the course of industry, fixing raw materials, processes, and products. The government attempted to do for a great kingdom in the eighteenth century what the guilds had done for little towns in the Middle Ages. It attempted, as they had done, to keep things just as they were. So, for example, it resisted the introduction of machinery in the knitting trade, forbidding the making by framework knitters of stockings resembling those knit by hand, and for a considerable period restricting the making, the transportation, and the sale of knitting machines.

NATIONAL ADMINISTRATION

All these regulations were tainted with the curse of the period, the attempt of the government to make a profit out of its operations. Manufacturers had not only to submit to inspection, but also to pay for it. The inspectors, of different grades, were seldom experts in their field; some of them frankly accepted an official post because they had failed in trade. The regulations became so

complicated and confused that their administration, even by a force of experts, would have been impossible. The evil done by them was tempered by the inefficiency and corruption of officials, but the laws remained nominally in force, always a threat to any manufacturer original and bold enough to attempt an innovation. Persons of influence would evade the restrictions, and would see that weaker competitors were kept subject to them. Even the government lost faith in its policy, and in the latter part of the eighteenth century made only half-hearted attempts to maintain the laws. Breaches in the system, allowing paper makers the free use of machinery, permitting textile manufacturers to make stuffs of such dimensions and quality as they chose, marked a gradual transition to freedom of manufacture which was not, however, achieved until the end of the century.

PRIVILEGED MANUFACTURES

One avenue of escape from these restrictions was afforded in a fashion characteristic of the country and the time: the government made laws and then gave or sold to favored individuals the right of exemption from them. Royal manufactures, so-called, included not only state enterprises, such as the arsenals and the Gobelin tapestry manufacture, but also private enterprises enjoying the royal favor and put above the ordinary law. In England as in France the kings had sought to use their power to grant favors of this kind. Their right to do so was one of the burning questions involved in the Puritan Revolution and in England was settled early in the seventeenth century by the solemn decision which became the basis of the law of patents, namely, that a right of monopoly could be granted only for a restricted period, and then only for such public service as a new invention. From then on in England the field of industry was open to free competition, without favor. In France, down to the Revolution of 1789, competition of a manufacturer subject to local and national restrictions with a manufacturer privileged by royal favor was hopeless.

ROYAL MANUFACTORIES

The development of the system of royal manufactories can be best briefly set forth by statistics. Before Colbert they numbered altogether 68, and under him 113 were established. In the first

half of the eighteenth century 243 new grants were made, and from then to the Revolution 158. The total of these figures is 582, but it would be wide of the facts to assume that a number approaching that total was ever in existence. These enterprises were forced, not natural growths, with the feeble vitality characteristic of their origin; many of them were short-lived. Yet in every period there were some of them sufficiently prominent to emphasize the fact that success depended on favor, and that political influence was more important than private initiative. Among the many features of the old régime in France obstructing industrial development, few had more serious effects than this system of royal privileged manufacture. At the time when in England the new class of captains of industry was rising, to transform the organization in the Industrial Revolution, the development of such a class in France was made practically impossible by restrictions imposed in the field of economic affairs, while favors were reserved for those who followed the path of political preferment.

The privileges conferred on a royal manufactory commonly included freedom from such public charges as taxes and the quartering of soldiers, immunity from inspection, the right to sell the product anywhere, sometimes the right of eminent domain or special privileges in recruiting labor, often a subvention in money and the grant of some social distinction.

CONDITIONS IN PRIVILEGED MANUFACTURE

Some of these privileged manufactories were large enterprises, employing hundreds of workmen, even more than a thousand, with a capital correspondingly large. Some of them included real factories in a modern sense, with considerable groups of employees, approaching or exceeding a hundred, working under oversight in a single building. Often, however, even when the workers were concentrated in one enclosure, not dispersed in the surrounding country, they had separate cottages in which they worked independently. They were subject to strict discipline and sharp restriction of their freedom of movement; in some cases there were strikes which resembled revolts rather than modern industrial conflicts. Records of the pay received by industrial laborers in this period show a disconcerting variety in different times and places. Some workers in a royal manufacture are de-

scribed as faring well; some appear to have received less than a living wage. Van Robais, a Dutchman who conducted an important textile manufacture under royal privilege, had the reputation of paying the lowest wages; he would not raise them when the price of his product rose, and would give out work enough to keep his employees busy only half of the time. Holker, an Englishman who conducted a royal manufacture of cotton at Rouen, boasted of the low wages he paid, compared with the English standard. The average wage of the industrial worker in the provinces about 1700 is given as 12 to 15 sous a day, perhaps twice as many cents in modern purchasing power; skilled workers in the cities might get 30 or 40 sous, while in the country districts females in such ordinary employments as spinning might earn only 5 to 10.

SPIRIT OF MONOPOLY

The grant of the privileges of royal manufacture was employed in its earlier history to establish new industries in the country, and nominally continued to be a reward for enterprise and invention. Actually it was a favor to be won by solicitation and intrigue. The Company of French Point obtained the monopoly of manufacture of that variety of lace, and required lace makers who had formerly worked at home to come to their factory, sometimes from a considerable distance, to work for them at very small wages. It managed to obtain a royal decree which forbade the manufacture not only of imitations but even of *other* sorts of lace in districts where the company had offices, and so obtained a strangle hold on labor. It seized and burned lace made in violation of its monopoly. The spirit of monopoly spread from the royal manufacturer to include other industrial undertakers, who organized rings to control the market and to raise prices in the sale of wool, cloth, mineral products, and so forth.

DISPERSION OF MANUFACTURE

The reputation of France as a source of supply of fine wares, particularly silks, and as a country with a great variety of manufacturing industries, should not be allowed to obscure the fact that agriculture remained still in the eighteenth century the mainstay of the organization. It is estimated that manufacture occu-

pied only one-eighth or one-ninth of the total population. Furthermore, the large establishment was still very exceptional. Most of the people engaged in manufacture worked at home or in little shops, with few apprentices or helpers. The inspector of manufactures in one of the French provinces (Poitou, 1747) wrote that there were 500 factories under his jurisdiction, but most of the manufacturers were themselves workmen, and not over 50 employers had all their work done by hired help. Manufacture was spread far and wide in the country districts, in the form of cottage industry. The guilds and the government fought a dispersion which made regulation impracticable, but the cheap labor offered by the agricultural population attracted inevitably a class of merchant employers, who gave out materials to be worked up at home.

This tendency to dispersion in the country districts must be borne in mind when enterprises are described as employing hundreds or even thousands of workers. Commonly there would be in such enterprises one or more warehouses to store raw material and finished goods and to furnish a place for offices, and sometimes there would be a shop or factory for finishing processes; but most of the workers would be scattered through the villages of the surrounding country. The project of a manufacture of linens at Troyes assumed twenty weavers in the factory proper, while the preparatory processes were all performed in the rural districts. In the cotton industry which grew up in Alsace in the eighteenth century the weaving as well as the spinning was done in the country cottages. Under these conditions work must still be done by hand with such simple implements as had long been in use. When power was needed, as in mills and forges, it was commonly obtained from water, sometimes from wheels turned by horses or men. The first cylinder printing machine in the cotton industry of Alsace was operated by ox power. One establishment relied on nine oxen for its power, and many continued to use horses until well into the nineteenth century. Steam engines were introduced before 1800 but were still few in number at that time.

TECHNICAL COMPETENCE

While factories, in the modern sense, grew up in France in the eighteenth century, the growth was sluggish, helped along by

special privileges in the case of royal manufactures, obstructed by the multitude of restrictions imposed upon the manufacturer who enjoyed no special favors. France continued still to hold a high place in the contributions of individuals to technical progress. The improvement of the loom by Vaucanson, of the iron manufacture by Buffon, the introduction of the slide rest in metal working, are illustrations of ingenuity worthy to rank with those of any other country of the time. The Academy of Sciences was an active center of experiment in invention; in scientific research the French were second to none. The government assisted in recruiting foreign workmen who could bring with them the knowledge of improved processes, and induced many to immigrate from Germany, Holland, Italy, and other countries. This incoming flow of artisans was balanced and probably exceeded by a movement outward of French workmen, whose technical experience was valued so highly that every country endeavored to attract them.

LABOR

France, therefore, was not kept from industrial progress by technical incompetence. Nor did the country lack cheap labor. There was nothing in French history, it is true, like the agrarian revolution in England, which drove a landless proletariat to the towns and supplied the developing manufactures with a working force which had to submit to factory discipline because that was the only alternative to starvation. Holker complained that he could not manufacture cotton goods so cheaply in Rouen as he had done in England, in spite of lower wages, a government subvention, and other privileges; though he paid the workers little he got little work from them, as they wasted time in talking, flirting, and so on. If the French were in this respect at a disadvantage compared with the English, the difference was only one of degree and was not decisive. There is, unhappily, evidence of an ample proletariat in the French towns to feed factories if other conditions had been favorable to their establishment and growth.

LACK OF LEADERS

The major reasons why the factory system made such a feeble beginning in France in this period were, first, the prevalence

everywhere of restrictions, and second, the lack of a class of business leaders, willing and able to break through these restrictions and build up industry on a competitive basis.

Here again France suffered from no lack of men with original ideas. On the contrary, the class known now as "promoters" was more numerous and more active in France than in any other country. Members of this class were known as *donneurs d'avis*; they were specialists in ideas, expert consultants. Unhappily the conditions of the time diverted them from any contribution in the field of economic production. They would, it is true, advise a client speculating in stocks, but in general their field of operation was political, not economic. Their major function was to advise the tax farmers how they might make the most money, whether by squeezing more from the people or by yielding less to the treasury. The great prizes of the time were offered not to those who served society but to those who served a government which lived to exploit society. The government of the old régime drained from the country both the capital and the men needed for industrial progress.

QUESTIONS

In what respects did France of the eighteenth century rank high; in what respects low?

What factors hindered political unification?

Contrast the Estates General and the British Parliament.

What French kings lived up to the responsibilities of their position?

Who were the actual rulers of the country?

How were the national resources spent?

What is meant by calling the French tax system regressive?

Illustrate the oppressive character of the salt tax.

What were the origin and faults of the *taille*?

Why did the government farm the taxes, and with what results?

Illustrate the burden of taxes.

What contrast did Arthur Young find in land holding in England and in France?

Illustrate the old-fashioned character of French tenures.

Explain the relative infrequency of large farms.

What were the characteristics of *metayage*?

Illustrate backwardness in implements and methods.

What was the condition of the nobles?

Illustrate burdens resulting from landlords' superior rights.

Illustrate living conditions of the cultivators.

- In what respects was France qualified for success in manufacture?
 What hindrances persisted in internal trade?
 Explain the persistence of the guilds.
 What were the principles of guild policy?
 What were the economic and social effects?
 Contrast the spirit of the guilds with that of later times.
 Illustrate the obstructiveness of the guilds, their quarrelsomeness.
 What was the later course of the guilds?
 How was manufacture affected by the national regulation of industry?
 How effective was the administration?
 Contrast France and England as regards privileged manufactures.
 How did they affect private enterprise?
 What privileges did they enjoy?
 What were their organization, and the conditions of labor?
 What was the relative importance of manufacture in the French organization?
 Explain and illustrate the dispersion of industry.
 Was French manufacture prevented from developing by technical incompetence? by lack of labor?
 Explain the major reasons for the backward development.

READING

The little book by Henri Sée, *Economic and Social Conditions in France during the Eighteenth Century* (N. Y., 1927), provides in most compact form reading parallel to the subjects of this chapter. The reader will find also much of interest in Edward J. Lowell, *The Eve of the French Revolution* (Boston, 1897); Hippolyte Taine, *The Ancient Régime* (N. Y., 1876); and in Alexis de Tocqueville, *The Old Régime and the Revolution* (N. Y., 1856).

- France under Colbert. (Clough and Cole, chap. 10, pp. 316-343.)
 Comparison of industrial growth in France and England, 1540-1640. (Nef in *Journal of Political Economy*, 1936, 44:289-317, 505-533, 643-666.)
 Classes and their demands, 1789. (Sée, chaps. 1, 13, pp. 2-12, 222-228.)
 Agriculture and the peasants. (Sée, chap. 2, pp. 14-56.)
 The French peasant before the Revolution. (Mme. Mary Duclaux in *Contemporary Review*, Sept., 1903, 84:349-364.)
 The clergy. (Sée, chap. 3, pp. 60-81.)
 The nobility. (Sée, chaps. 4, 5, pp. 83-119.)
 Trades and guilds. (Sée, chap. 6, pp. 121-135.)
 Commerce. (Sée, chap. 7, pp. 137-154.)
 Industrial development. (Sée, chap. 8, pp. 156-173.)
 Conditions of life. (Sée, chap. 9, pp. 175-189.)
 The middle classes. (Sée, chaps. 10, 11, pp. 191-210.)
 Poverty and its relief. (Sée, chap. 12, pp. 211-221.)

CHAPTER XIV

France: Agriculture

The preceding chapter was introduced by a statement of a contemporary Frenchman that the characteristics of his countrymen even after 1900 were much like those which had marked them even before 1800. In this and in the next chapter, covering the economic development of France in the nineteenth century, there will be an opportunity to test and to illustrate the truth of this remark. In anticipation of the details of the history it may be profitable here to point out some general features of pre-1914 France which marked the country as more old-fashioned than other countries with which it would naturally be compared.

FRANCE ABOUT 1900

Figures of about 1910 showed the proportion of peoples engaged in agriculture and in manufacture and mining as follows:

<i>Countries</i>	<i>Percentage in Agriculture</i>	<i>Percentage in Manufacture</i>
France	41	33
England and Wales . .	8	48
Germany	35	40
United States	33	30

More than any of these other peoples the French still clung to the occupation of agriculture, which from the time when Adam delved down to the Industrial Revolution had been man's main employment, but which was now being replaced by manufacture in the leading countries. A census taken ten years later would show even the United States joined to the industrial group, and of the four countries France alone in the preponderance of agriculture.

Of equal, perhaps of greater, significance was a fact, which will be illustrated later by other figures, that the French, both in agriculture and in manufacture, engaged in production on a

smaller scale than that common in other leading countries. The peasant with a small farm was still the leading figure in agriculture; the individual artisan and the small shop still bulked large in the statistics of those engaged in manufacture.

INTERNATIONAL COMPARISONS

In trade a tendency to self-sufficiency inherited from the past marked still the family, the district, and the country as a whole. France supplied still by far the largest part of its need for food; the proportion of foods among its imports was less even than that of the United States. The proportion of manufactures among its imports was below that of any of the other three countries. France imported mainly raw materials (58% of merchandise imports), and except in the case of silk goods manufactured mainly for the home market.

The figures of coal consumed, a good index of advancement in transportation and manufacture, were as follows for the three European countries (in millions of tons) :

<i>Year</i>	<i>France</i>	<i>Germany</i>	<i>United Kingdom</i>
1865	18	25	90
1885	29	67	138
1908	54	206	199

The railway freight traffic (tons times distance in kilometers, in thousand millions) was in 1913:

France. . . 29 Germany. . . 67 United States . . 421

The density of traffic (figures above compared with length of line) was in Germany and in the United States nearly double what it was in France.

France had in 1912 little over one-third of the mileage of telephone lines in Germany, and sent less than one-seventh of telephone messages.

The scattered facts used above to indicate the contrast between France and some of the other leading countries may serve to direct the reader's attention to the problem of the reasons for the difference; this and later chapters will present material for further consideration of the problem, if not for its solution. In closing this introduction, however, it may be well to indicate the existence of a problem still larger, still more important and more

difficult, which must remain in the background. Siegfried discusses facts like those above, illustrating the self-sufficiency of the French, but he summarizes his account in a formula which transcends any economic terms: "The best description that one can give of pre-war France is that it was a happy country."

THE FRENCH REVOLUTION, 1789

The old régime in France, described in the previous chapter, ended abruptly with the French Revolution of 1789. No people had ever made so determined an effort as did the French of that time to dig a gulf between themselves and their past; not until the Russian revolution of 1917 would there be a parallel in history. The French of the revolutionary period had been preceded by philosophers and theorists who gave them the ideals of an entirely new world, and these they now attempted to realize. It is not possible in this book to describe the Revolution or even to discuss in detail its effects. As the years went by, more and more of the new ideas were discarded, the people reverted more and more to the habits and institutions which had directed their activities in the past. The Revolution did a great service in its work of destruction, sweeping away the antiquated remnants of a political and a social system long outgrown. The new growths, however, which came up and endured, were grafted on the old; they were not the offspring of fresh seed sown by the philosophers. Under Napoleon and under the kings of the restored monarchy who succeeded him the political and social life of the country was really a continuation of the old régime shorn of its more serious abuses. In economic affairs, as will be seen, the Revolution made a distinct mark, but it drew no sharp dividing line between past and future. Here again it served progress by its efficiency in destruction rather than in creation. In agriculture and in manufactures it freed people from trammels inherited from a distant past, but it left almost undisturbed the great underlying economic institutions of property and of production.

THE NINETEENTH CENTURY

Following the Revolution came almost twenty years of war. The period is often compared to that of the first World War in the next century. Here again, however, we are probably inclined

to exaggerate the effects. France was still in such a low stage of economic development that it was relatively insensible to shocks which, repeated for that length of time, would ruin a more modern civilization. France emerged from the long wars, in 1815, certainly not unscathed, but on the other hand not gravely crippled.

There followed then such a period of peace as the world has not known since modern states arose. The Franco-Prussian war, 1870-71, the most serious conflict in which France was engaged, was a blow which checked the economic development of the country for a time, but which was not, perhaps, so decisive an influence as is sometimes represented. The loss in territory was offset by gains made in other continents; the loss in men was small compared with that which came from the declining birth rate; the loss in capital was repaired with amazing ease. It is convenient for some purposes to divide the recent economic history of France into two parts, before and after 1870. That date is chosen, however, not only because it marks the Franco-Prussian war, or the third republic in France. It is about the time when steam navigation and railroad transportation first brought the other continents so close to Europe that economic problems of an entirely new kind arose.

EFFECT OF THE REVOLUTION ON AGRICULTURE

Soon after the outbreak of the French Revolution of 1789 the country people began to storm the castles of their lords as the people of Paris had stormed the Bastille. The old régime was at an end. A decree of 1793 sought to abolish, root and branch, the intricate system of custom and regulation which marked the superiority of the noble landlord to the common man who worked the fields. All men were to be equal before the law. One man might still become dependent on another by free contract, but such dependence as rested on the custom of the past was abolished; the former manorial tenant became a full proprietor. All proprietors were to cultivate what crops they pleased, freed from the vexatious restrictions of the former government. In agriculture as in other spheres of interest the Revolution sought to introduce a new era of liberty, equality, fraternity.

The Revolution was a turning point in its abolition of privilege. Its effect on the distribution of property was less than might be supposed. Even before 1789, as said in the previous chapter, there were in France a great number of petty cultivators, who differed from proprietors only in the annoying incidents of their tenure. Counting these among proprietors, the total number holding land before 1789 has been variously estimated at from 4 to 5 million. The Revolution put on the market a great amount of land previously held by the state, by the clergy, and by the emigrant nobles. Some of this land went to increase the holdings of the petty cultivators. The number of proprietors grew, perhaps by half a million. But much of the new land was kept as undivided property by the communes; much passed into the possession of the rising middle class, who had a fund of capital to invest. The new government needed money, and followed a fiscal rather than a social policy in disposing of the free land. If France of the nineteenth century was characteristically a country of peasant proprietors, this was not a result of the French Revolution. The Revolution facilitated the development of such a class, but did not create it.

LAND TENURE IN 1814

A series of reports made to the government, published under the title "Agricultural Statistics of 1814," show great variety in the size of holdings in different parts of France. There were some districts (as in Brittany) where the largest farm did not extend above 50 acres of arable, and holdings ranged in size down to 10 or 12 acres or even less. "Properties are in general so subdivided that he who cultivates his little patrimony or the field of another is often obliged to borrow the plow of his neighbor." Further south, but still in the grain-growing country (department of Deux Sèvres), a farm of 10 acres was said to be large enough to keep a man busy through the year; such farms were better cultivated and gave a better wheat crop than the larger farms on which several plows were kept. From these miniatures the size of the holding ranged up through all possible gradations to the large enterprise of hundreds of acres. It is interesting to note that in one region (Valence, department of Drôme) many large proprietors had begun since the Revolution to cultivate their own

properties, and were credited with a very beneficial influence on agricultural methods by the experiments which they tried and the examples which they set.

LEASES

A considerable part of the agricultural area was still let out by the proprietor to a farmer or cultivator who paid a money rent or a share of the crop. In some districts of the north the land was leased in large farms, and was well cultivated by a class of capitalist farmers. Commonly the lease ran for nine years, and contained regulations by which the fertility of the land was to be maintained. More often the land was let in small holdings, sometimes for a rent to be paid in grain, not in cash. Leases for three or for six years were not uncommon. These leases would ordinarily contain a provision that the farmer must follow the usual course of cropping in the district, but if this restriction prevented some abuses it certainly discouraged progress, and in connection with the short term and small size of the holding contributed to make agriculture inefficient.

METAYAGE

Metayage, share-cropping, which Arthur Young described as the predominant tenure in France before the Revolution, still persisted to a large extent, but was now on the defensive and was declining. Commonly the proprietor provided land, house, live stock, implements, and seed for the first year; after the harvest, seed for the next year was reserved and the rest of the crop was divided, half and half. Taxes and repairs were shared in various ways. This arrangement grew up in Europe, as has been said, when custom rather than contract ruled society, when the working class was wretchedly poor and ignorant, and when proprietors assumed quite naturally a patriarchal attitude toward their dependents. The old conditions still lasted in some regions, as described in Segré, 1815 (department Maine-et-Loire). "The proprietor directs all the work, sells the cattle; nothing is done without his participation. The way of farming cannot enrich but cannot impoverish the farmer. It is an absolutely paternal administration. The master and the metayer do nothing without consulting each other." In Brive (Corrèze), "The agreements

between proprietors and metayers hold usually for a year; but they continue by tacit renewal, without any other act, as long as the master is satisfied with the metayer, or the metayer with the proprietor . . . ; it is not unusual to see families remain on the same estate for 30 and 40 years and even indefinitely without renewing the agreements." But, as has been suggested, when the idea of individual contract began to sap the force of custom, both parties to this arrangement would see the advantage of a money rent, the proprietor because he would be assured a definite return without so many personal demands upon him, the metayer because he could keep not a part but all of the return above the rent fixed. So we read (Dreux, Eure-et-Loire) that metayage was much more common before 1789, and that proprietors were abandoning it all the time for a money rent which would give them a return both more certain and more nearly corresponding to the value of their property. The official who reported on conditions in Cosne (Nièvre) criticized the leasing system, but thought that metayage was as bad. "The method of cultivating by metayers paralyzes the progress of agriculture at least as much as leases for short terms; it condemns the metayer to ignorance and misery, and demoralizes him by forcing him constantly to choose between his conscience and his interest" (in dividing the product).

BACKWARD METHODS

Almost all the reports of 1814 describe an agriculture which adhered to the traditions of the past. Normandy was certainly not one of the more backward parts of the country, but these reports from that province are characteristic: "Rural economy had made no progress, the method of cultivation is always the same"; "The cultivator, accustomed to follow his routine, never takes the chance of making experiments." The open-field system, with its accompaniment of *vaine pâture*, the right to pasture stock on the stubble, forced all cultivators to follow the same routine of cultivation, since all the crops of any field had to be harvested by a certain date when the animals were let in; it was less common in the south, but persisted in some parts far into the nineteenth century. Its bad effects were apparent. "There is not a good cultivator who does not vote for the abolition of this right,

which is as harmful to changes in cultivation and to doing away with fallow as it is to the welfare of sheep," who were raced about by shepherds in competition for a scanty pasture (Rambouillet, Seine-et-Oise). From the same department (Corbeil) it was reported that this right caused damage to the crops and the woods, to the ditches which served for boundaries and for drainage, and to the animals themselves by spreading epidemic diseases.

CROPS AND YIELDS

The reports of 1814, and similar reports compiled by English consuls and published in 1836, show a great variety of field systems. The old three-field course (winter grain, summer grain, fallow) was the most common, but was far from universal. In a progressive district, such as that about Calais, where the farms were commonly 100 to 200 acres in size, and ran up to 250 acres, the land was kept almost constantly under crops, a field might lie fallow only once in 8 or 9 years. Good land yielded about 30 bushels of wheat an acre, fair land 22, inferior land 11. Reports from other districts gave 20 to 30 bushels as the yield from the best land, and for the inferior land noted yields as low as 8 or even 6, a medieval standard. Taking the country as a whole the level was very low; official statistics for the years after the close of the Napoleonic wars gave an average yield per acre of only 11 bushels. In many districts systems of cropping were practiced which were even less efficient than the old three-field course. So on the lower Loire, "On the best lands, adapted for wheat, that grain only is sown, and they are left fallow for the next year. On others buckwheat follows wheat, and on some rye; and these lands, after two harvests, are left fallow for five or seven years. This is the general and wretched husbandry of this department." Even worse were the conditions in a backward region like La Vendée. "The farmers are without capital, are badly provided with implements, have not half the number of labourers required for the land, do not lay on a sufficient quantity of manure, and will use but very little lime, although they find their wheat suffer by the smut for want of it; the fields are always full of weeds, for the roots are left entire by the miserable ploughs in use, and from the want of hands to pluck them out."

PLOWS

In gathering the statistics of 1814, officials from local districts all over France were asked to describe the plow in use. The significant feature of their answers is, first, the general statement that the plow was of the form used from time immemorial in that vicinity, and, second, the indication that each locality had its own favorite form, established by usage. The character of the soil and of the crop of course played a part in this variety, but mere tradition was certainly one of the reasons for the difference. All of the plows were made of a combination of wood and iron. Some of them were of the simplest character, resembling a narrow hoe tearing up the earth; some of them were rigged on an axle between two cumbrous wood wheels. The coulter, to cut the sod, was described in some forms as resembling a broad-bladed knife, over 30 inches long, and it is interesting to note that in one district, at least (Chartres), the government required it to be removed from the plow at night, because it offered "a murderous instrument, which has often served in the commission of crimes."

An index of the efficiency of these implements is furnished by statements of the animals required and the ground covered. Horses were the usual draft animal in the north, oxen (even cows) in the south. In one region (Côte d'Or) oxen had formerly been in use because they could be maintained by browsing in the woods, but the government had restricted this practice to preserve the forests, and horses were introduced. Horses were sometimes hitched in front of the oxen (Maine-et-Loire), not so much to help pull as to hurry the pace. In Aveyron a yoke of oxen plowed 15 to 20 acres in a season. In Haute-Marne a plow team of 4 to 6 horses covered 30 acres or less in a season. In Eure-et-Loire (Chartres, a great grain-growing region), 1 man with 2 or 3 horses plowed $11\frac{1}{4}$ acres a day; plows were drawn also in different localities by 2 oxen and 1 horse, and by 2 oxen and 2 or 3 horses. In Maine-et-Loire the plow team consisted of 6 oxen alone, or of 4 to 6 oxen plus 1 or 2 horses. Teams of this size needed, of course, a driver as well as a plowman. In Nièvre plows were drawn by 6, 8, and even 10 oxen, yet the plow never went deeper than 5 or 6 inches, even in the lightest soil. In this

last locality wheat was grown on the old three-course system, and yielded an average of a little less than 9 bushels per acre, of which nearly 2 had to be reserved for seed! These figures would be incredible if one did not take into account, first, the wretched condition of ill-bred and ill-fed live stock, second, the character of the plow, third, the fact that the cultivator tried to make up for ineffective plowing by repeating it several times. Land was plowed three or even four times before wheat was sowed.

LABOR

Even more serious, almost startling, are the figures which indicate the amount of human labor working on the land, in proportion to its area. A Frenchman, Dupin, writing in 1827 and using, it is true, rather shaky estimates, figured an average of 13.5 human labor units per 100 acres in France, an average of 2.5 in England. An Englishman (Earl Lovelace, writing in 1848 but using earlier figures) estimated 9.5 labor units to 100 acres in France, 3 in England. No one believes these figures to be exact; no one can contest the general truth of the contrast which they indicate. In the vineyards of the south, where spade work was the rule, one is not surprised to find (1836) a holding of 16 acres worked by 2 men, their wives, and children. The figures above, however, apply to France as a whole, in which arable agriculture employed by far the largest part of the population.

USE OF LAND

From the English author last mentioned the accompanying table has been constructed, as the best summary presentation of the nature and the results of French agriculture in this period, say about 1840. As the figures, although official, are necessarily inexact, I have given the equivalent in round dollars.

<i>Use of Land</i>	<i>Area</i>	<i>Return per Acre</i>		
	(Millions of Acres)	(s	d.)	(Dollars)
Ordinary tillage (cereals)	34.3	54	7	\$13
Special crops	6.8	87	4	21
Fallow	16.7	4	7	1
Artificial grasses	3.9	43	4	9
Meadows	10.4	37	2	10
Pasture and waste	22.7	3		1
Vineyards	4.9	71	8	17

By far the largest part of the land regularly cultivated was planted with cereals, of which wheat, oats, and rye were most important but which included buckwheat and cheaper grain. The relative proportion of tilled land and fallow is what we should expect in a country in which the three-field system was still so common. The immense expanse of this fallow, merely growing weeds and affording but scanty food for animals, was then and long remained the weak point in French agriculture.

FORAGE CROPS

The lack of fodder for stock, which was one of the great weaknesses of the three-field system, caused the people to prize highly the natural meadows and explains the growth in the cultivation of such crops as clover, saintfoin, etc. They had been introduced before the Revolution; the statistics of 1814 report that they had already in some places reduced the price of hay, and had lowered the rent of meadow and pasture land by one-fifth or one-quarter. Corbeil (Seine-et-Oise) reported that they had been introduced 50 or 60 years before, had become general in the last 25 years; "to-day there is not a single farm which does not devote a part of its lands to these products"; "cultivators have found in artificial hay fields the real reason for their comfortable position." Their great benefit, of course, was that without exhausting the soil they furnished fodder for a greatly increased number of farm animals, who in turn furnished manure for the grain fields.

SPECIAL CROPS

The root crops, which played such a prominent part in the reform of English agriculture, were known in France but were not nearly so important there. The "special crops" indicated in the table included the potato, beet for sugar, rape for oil, flax and hemp for fiber, tobacco, and woad for dyeing. These crops were cultivated at a disadvantage until the artificial grasses made inroads on the old three-field course and provided additional supplies of manure. The potato, in 1814, was often cultivated in gardens, and sometimes in the field, but had become an important article of food only in certain districts. In Parthenay (Deux Sèvres), it was a field crop on almost all the farms; "it is commonly used for the food of animals, and even of men in periods

of scarcity of grain." Through the first half of the century the potato grew constantly in importance as a crop and as a food. In 1862 it ranked in importance next to wheat and oats, and ahead of other field crops in value.

YIELD OF WHEAT

Arthur Young, who traveled through France about 1790, had no official statistics on which to base averages, but was an alert observer. He estimated the yield of wheat at 16 bushels per acre, and the average return on agricultural land at 35 shillings (a little less than \$9) per acre. If we accepted his estimates we should reach the conclusion that in half a century French agriculture stood still or went backward. In only a single year from 1815 to 1840 did the wheat yield reach the level of 16 bushels per acre. Writers about 1840 estimated the gross return on agricultural land at 30, 32, 34 to 35 shillings (say \$8 to \$9) an acre. Young probably exaggerated the average return as much as he did the yield of wheat. When official statistics became available, in 1815, they showed the following results, giving the wheat yield in bushels per acre in a rough annual average over the period indicated.

<i>Period</i>	<i>Bushels per Acre</i>
1815-20	11
1821-30	13
1831-40	14
1841-50	15

A rate of gain such as that would, under some circumstances, seem extraordinarily high. In France it meant merely that the agriculture was emerging from a medieval condition. Progress was rapid because there was so much ground to make up, and even this rapid gain left the country far behind efficient contemporaries. The really important conclusion which emerges from a study of such estimates as have been quoted and also from a study of more concrete and reliable accounts is that the level of production, measured either by the acre or by the man employed, remained very low.

SMALL HOLDINGS

Among the reasons for the low returns of agriculture is one already indicated but which deserves emphasis, and which can

be made the occasion for reviewing other related factors. France was already a country of peasant farms, so small in size that many were real dwarfs, much below the level of economic efficiency. Small holdings, common before the Revolution, grew steadily in number. It is not possible to give reliable statistics to illustrate the subject. Such figures as are available do not lend themselves to analysis: they combine different kinds of land (forests, arable, and vineyard, for example); they fail to combine the property holdings of a man in different localities; figures of properties lead to no certain conclusions regarding holdings, the real economic units, in the *possession* of one man but the *property* of another. With this introduction some estimates of the period may be quoted, but with the warning which applies even to much more recent statistics, that they can be accepted only as very rough (and possibly misleading) indications.

For example, let us take a report to the British government on the ownership of land in France, dated 1869.

Property is generally divided into three classes:

1. Properties averaging 600 acres, numbering about 50,000
2. Properties of 60 acres, numbering about 2,500,000
3. Properties of 6 acres, numbering about 5,000,000

If a reader with a critical bent finds the figures above quoted suspiciously neat, he can discover good basis for his skepticism by calculating total areas involved. The figures give a total of 210 million acres; the actual total area of the country was not much more than half that! The figures greatly exaggerate the extent of the medium-sized estates.

Another calculation of the time, designated "official" by the English author who quotes it, classified families according to the rental value, net income, of their properties. There were estimated to be, in round numbers, 5.4 million families owning land.

2.6 million held land of an annual income under £2, say \$10
0.9 million held land of an annual income under £4, say \$20
0.8 million held land of an annual income under £8, say \$40

These made up a total (allowing for decimals rounded) of 4.2 million, leaving only 1.2 million owning each enough land to

afford an annual income above £8 or \$40, after taxes and the necessary costs of cultivation were deducted.

AGRICULTURAL CLASSES

Another set of figures, more detailed and somewhat more reliable, classified the agricultural population not by area of land or amount of income, but by their relations to each other. The table is given here, again in millions and rounded decimals, that the reader may not have his attention distracted by insignificant figures.

	<i>In Millions</i>
1. Proprietors managing their own estates	0 06
2. Proprietors cultivating their own land	1 8
3. Proprietors cultivating their own land and also working on the land of another	2 0
4. Farmers (lessees) of land, also owning land of their own	0 6
5. Metayers also owning land of their own	0 3
6. Day laborers also owning land of their own	1 1
7. Farmers of land not owning land of their own	0 4
8. Metayers not owning land of their own	0 2
9. Day laborers not owning land of their own	0 9
Total	7 3

This table comes near enough important facts to deserve serious attention. The most impressive feature is the showing that nearly three-quarters (72%) of the agricultural population owned some land, even if it was only a scrap of garden. However much the members of classes 1 to 6 might differ in the amount of land held, the difference was of degree, not in kind; they all had such an interest in the security of property as ownership of land involves. Class 2 represents the true peasants, each owning enough land to absorb his whole time, but not enough to enable him to live without work upon it. Class 3, largest of all in the table, comprised nascent peasants, working their way up to complete independence. These two groups made up, together, more than half of the agricultural population; both economically and socially they set the tone of the industry. Farmers and metayers were not half so important, and of them, again, much more than half owned some land of their own. Of over 7 million total there were only 2 million who sought their livelihood in work of which all the profit went to others, and of these again much more than half owned some bit of land.

SUMMARY

Reliable figures of the distribution of landed property or of the division of land among actual farmers cannot be had. It can be stated with certainty, however, that small holdings greatly exceeded in number the medium-sized and large farms. Socially, the petty cultivator represented the largest class in the agricultural community. Economically, measured by total area in holdings of different size, the small holdings were less important. They were individually so small that the aggregate area embraced in them certainly covered less than a half, probably less than a third of the cultivated surface.

It is instructive to compare the figures of agricultural classes, in the table above, with the statistics of agricultural land. If we drop from the table classes 6 and 9, the laborers, we have left over 5 million (5,329,575) persons who may be termed heads of agricultural enterprise, "farmers," even if some were of a most modest kind. In the same year (1862) the areas of different sorts of agricultural land were enumerated as follows.

<i>Land</i>	<i>Million Acres</i>
Arable	66
Vineyards	6
Meadows	12
Pastures	16
Total	100

It would certainly be wide of the fact to assume from a comparison of these figures that there was such a thing as an "average" French farm of 20 acres, including 13 acres of arable, and so on. Rather, we must picture a great many fragments of farms, of but an acre or two, occupying only part of a man's time; a large number of farms of perhaps 10 to 20 acres; a smaller number but a large extent of farms running from 20 acres up to several times that size; and relatively few very large farms.

AGRICULTURAL IMPLEMENTS

Some of these figures may be compared with detailed statistics of agricultural implements and machinery, available for 1862; there is, again no pretense that the results are more than rough indications. The figures in column (a) give the number of imple-

ments, in column (b) the number of acres of arable (including fallow) to each implement. For example, there were 16 acres of arable to a plow (the larger figures are rounded). Column (c) gives the percentage (rounded) of heads of agricultural enterprise who owned the implement in question: 18.8% of 5,329,575 heads owned harrows.

	(a)	(b)	(c)
Plows	3,206,521	20	60
Harrows	1,002,302	70	20
Cultivators	25,846	2,500	0.5
Threshing machines	97,884	700	2
Sowing machines	10,853	7,000	0.2
Mowing machines	9,442	7,000	0.2
Reaping machines	8,907	7,000	0.2

Summarizing these figures, we find that except for hand implements the plow was the only general instrument of agriculture in France. Even the plow was far from universal, for spade work persisted in the vineyards and outside, but there were enough plows to provide one for an average arable area of 20 acres. Less common was the harrow, still of the old type, with a wooden frame and wooden teeth projecting. Cultivators, "horse hoes," were rare; only 5 in 1,000 of the farmers had them. Threshing machines were displacing the flail or the still more primitive method of treading out the grain by driving animals over it; this is just the period in which they were being widely adopted, the number of them had nearly doubled in the past 6 years. But such modern instruments as sowing, mowing, and reaping machines were still rare; there were not enough of them to provide one for each even of the large estates.

FRAGMENTATION OF FARMS

Still another element of the situation must be introduced here, to explain why French labor was ineffective and why agricultural machinery was so tardily introduced. The units of agricultural enterprise were commonly small in area, as has been shown, but, to make the matter worse, these little farms although they were under one head were not commonly of one piece. They were often, probably much more often than not, composed of separate fragments. Reliable statistics again are lacking. All that can be said is that separate properties (including urban) assessed for

taxation comprised each about eleven parcels, on the average. Such a scattering of landed properties was, of course, normal in the old open-field system, and undoubtedly was to a considerable extent the result of that system. The evil had certainly been intensified, however, by the division of estates among heirs. Each of the heirs would demand in the division his share of each kind of land, arable, meadow, and pasture; some even insisted on a portion of the barn and of the house. Carried on for generations the process resulted in a scattering of fragments which offended all principles of efficient cultivation.

LOCAL SELF-SUFFICIENCY

The former separation of the provinces of France by customs barriers disappeared in the Revolution, but the practice of local self-sufficiency continued until the railroads gradually broke it down. The wine of the south was of course transported north, generally by water, and some other specialities had established themselves. Even in 1814 Roquefort cheese to the amount of over 400 tons was produced from sheep fed on the limestone plateau of Aveyron, was ripened in the caves of the region, and was marketed as far as Bordeaux and Paris. In general every district, even in the south, attempted to raise its own food, and bought the minimum from outside. In the country districts this self-sufficiency extended even to the family. Of the women tending the cows along the lower Loire we read (1836): "They take with them their distaff or their knitting, and thus prepare a considerable quantity of the clothing used by the family from the flax raised upon the premises." The reader will note the reference to the distaff, the ancient instrument which preceded the spinning wheel, and which was of course better fitted to outdoor work, but at this same period we are told that further south (Gironde) the women working indoors scarcely used the spinning wheel, "the distaff is the only method they know." Again we see the tradition of centuries holding firm against change.

CONDITION OF LABOR

The result of all these conditions was of course a low product and a low income per capita. Taking for illustration common

labor, as relatively reliable statistics are available for this class, we find the pay per day was about 2 francs in 1858, while the price of wheat was about 8 francs a bushel; a man had to work four days to earn a bushel of wheat. It is interesting to see the official estimates of a family budget of this class, all members of the family working for such time as they were commonly employed. Very rough equivalents in dollars are given.

<i>Expenses</i>	<i>Francs</i>	<i>Dollars</i>	<i>Income</i>	<i>Francs</i>	<i>Dollars</i>
Food (incl. bread			Wages, 1 man . .	350	70
235)	378 50	75	Wages, 1 woman .	102	20
Lodging	42.50	8	Wages, 3 children .	151.50	30
Clothing	91	18	Total	603.50	120
Other	70	14	Surplus	21	4
Total	582	115			

The figures present an impressive contrast with similar statistics for laborers of the present day: in the totals, in the high proportion demanded by food, in the low proportion available for "other" expenses. This last item would include such necessities as light and heat, of which the family enjoyed little which it could not obtain free; if a surplus for "amusements and luxuries" existed it must have been pitifully small.

FOOD

Bread was then as later the mainstay of the French diet, but bread made entirely of wheat was still a luxury to the lower classes. Great quantities of buckwheat were raised, and in some districts formed the main food of the people; in 1836 potatoes were taking the place of buckwheat pancakes on the lower Loire. In the highlands of the Tarn (south central France) even in 1814 potatoes were extensively used; the people there were described as living exclusively on potatoes and chestnuts for six months of the year. The report of a British consul at Boulogne (1836) gives a sample dietary in a progressive region. "The ordinary food of the labourers in agriculture consists, in the morning, from four to six o'clock, of milk thickened with flour, which they eat with bread composed of an equal proportion of wheat and rye. At half-past eight o'clock the same sort of bread and butter, with water or thick milk. At noon, a soup made with lard and cabbage, and on particular occasions, soup made with

pickled pork and vegetables, haricots (a species of French bean), peas, etc., with bread; beverage, small cider * or water; but never any butcher's meat."

HOUSING

In the laborer's budget the only item which had about the same relative importance then as now was clothing, which was made often from wool and flax spun at home, and which always included wooden shoes for wear on every day except Sunday. The sum apportioned to housing is ominously low. Some definite information on this subject is afforded by fiscal statistics, for a tax on the doors and windows of a house has been a regular part of the French system. Of 7 million dwellings (1846), nearly half had at most 3 openings (*i.e.*, 1 door, 2 windows); nearly 2 million had but 2 openings, a third of a million had but 1 opening—no window at all. These last were survivals of the eighteenth century, when they seem to have been general in the country districts. They may fairly be described as dens: a single room with a dirt floor, sunk low in the ground, entered by a low door which alone gave access to light and air. In the nineteenth century conditions improved. A family would at least live above ground, and would often have 2 rooms and sometimes a garret or loft in addition. Provision was generally made for the live stock outside, but even in 1836 the farmers of the lower Loire were described as "miserably lodged in most instances, frequently sleeping in the same apartment with their cattle."

From conditions described above, the change was gradual in the second half of the nineteenth century, until near its close. A more rapid movement was intensified by the conditions growing out of the first World War, and will be treated in a later chapter.

AGRICULTURE AFTER 1870

More than half (51%) of the French people were still occupied in agriculture in 1872. The proportion gradually declined,

* "Small" cider was made, presumably, by adding water to the pomace after the juice of the apples had been squeezed out, and pressing it again, so resembling the English small beer, and the *piquette* of the wine countries, which was a common beverage for those who could not afford the wine made from pure grape juice.

but even in 1911, just before the war, amounted to 41%; France remained still a country predominantly agricultural. The old crops persisted. In 1899, the year of a banner wheat crop, France ranked next to the United States and actually exceeded Russia in the production of wheat. For a few years about that time the country came near to complete self-sufficiency in its supply of wheat. Improvements in transportation by land and sea threw on the European market the cheap grain of other countries and France was exposed to the effects of these changes. The country, true to its traditions, protected itself by a tariff which was raised from time to time until, in 1894, it amounted to about \$0.50 a bushel on wheat. French agricultural producers were being maintained at the expense of the consumer. Against an enemy of another important crop, the product of the vine, similar measures were of no avail. About 1865 a minute plant louse, the phylloxera, was found to be infesting the vines; by 1882 four-fifths of the vineyards in the department (Herault) leading in wine production had been destroyed. The pest was gradually overcome by the introduction of American root-stocks, which showed superior power of resistance, and by washes with water and chemicals, but the market did not keep pace with the increased production, prices fell, and about 1900 the industry was passing through a severe crisis.

IMPROVEMENT

An indication of progress in methods in the most important branch of French agriculture is furnished by figures of wheat yield, which are given below in rough approximations of the annual yield in bushels per acre.

<i>Period</i>	<i>Bushels per Acre</i>
1851-60	15.5
1861-70	15.8
1871-80	15.8
1881-90	17.3
1891-1900	17.9
1901-1910	19.4

A glance at the figures, covering two generations in time, shows that from 1850 to 1880 conditions remained nearly stationary, but that there was distinct progress after 1880, even though, as

will later be shown, this was not sufficient to bring France to the level of its contemporaries. Better use was made of the land. A more modern system of cropping reduced the area of unproductive fallow and at the same time increased the yield on the large part still cultivated with cereals. Modern agricultural machinery spread through the country districts. Comparing the statistics for 1892 with those already given for 1862, the number of plows increased only a little, but the cultivators increased nearly ten-fold, and the other examples of specialized machinery listed in the table grew to 2-3-4-5-fold of the previous numbers. Chemical fertilizers were used to supplement the farm manure; the importation of this new aid to agriculture rose from 99,000 tons in 1890 to 232,000 in 1910. The tendency to local self-sufficiency diminished, and territorial specialization in different crops developed with the improvement of the railroad system.

INTERNATIONAL COMPARISON

Nevertheless, at the close of the period, France still remained behind other countries in the efficiency of its agriculture. A measure is given in the accompanying table which gives in bushels per acre the yield of different crops in four European countries and in the United States, taking the average of the ten years 1903-12. In the last line the rank of France among European countries is given, if other countries not included in the table but for which statistics are available are counted.

<i>Country</i>	<i>Wheat</i>	<i>Rye</i>	<i>Barley</i>	<i>Oats</i>	<i>Maize</i>	<i>Potatoes</i>
France	20	17	25	35	19	129
Germany	30	27	36	52	—	197
Great Britain	32	29	35	48	—	228
Russia	10	13	15	21	16	105
United States	14	16	25	30	27	96
Rank of France	9th	11th	10th	9th	5th	11th

The ranking in the last line is somewhat unfair because the list from which it was made up included some countries in which the crop was grown under special conditions and in very small quantities. Yet it is certainly significant that France appears always so far down on the list, and in the table always so far below Germany and Great Britain, superior only to Russia. As regards the United States it should be noted that cultivation here

was extensive, in the economic sense, and the labor power which in Europe (even in Russia) would be concentrated on a small plot was spread over a large farm; the yield per unit of area was small but the yield per person employed was many-fold that which would be shown by any of the countries in the table. If the table were extended to include other products, France would still make a poor showing. In the product of sugar beets and in the amount of sugar obtained it was again 8th or 9th. The product of milk per cow was estimated to be about half that obtained in England or Germany, about a third of that obtained in Denmark or Switzerland. Only in the culture of the vine did France stand high among European countries.

REASONS OF INFERIORITY

The reason for this inferiority was certainly not any disadvantage of soil or climate. It must be sought in the human element. Looking at the matter in one aspect it may be said that the French got less from their agriculture because they put less into it. Their cows gave less milk because they had less to eat of such concentrated foods as bran, oil-cake, and various residues. Their sugar product was below the German because their seed (two-thirds of it bought from Germany!) was not so good, because the beets were not so well cultivated and handled, and because, again, they did not have so much fertilizer on which to feed. Of chemical fertilizers France used in its agriculture at this time about two-thirds as much phosphates per acre cultivated as did Germany, one-third as much nitrates, less than one-twentieth as much potash salts. In spite of all the progress which French farmers had made in the nineteenth century they were still behind those of other leading countries in their application of capital, whether it took the form of fertilizer or machinery, and in their knowledge of methods.

HOLDINGS ABOUT 1900

To explain these facts we must return to a study of the organization of French agriculture. Statistics of the holdings, "farms" managed as independent units whether owned or not by the possessor, are given in round numbers for the year 1908 in an accompanying table.

<i>Farm</i>	<i>Number</i>	<i>Percentage of Area</i>
Very small (under 2 5 acres)	2,000,000	3
Small (2 5 to 25 acres)	2,500,000	26
Medium (25 to 100 acres)	700,000	34
Large (over 100 acres)	150,000	37

The distribution of land, as sketched in the statistics above, appears to approach closely the ideal presented by agricultural economists, in which a combination of large, medium, and small holdings intermixed offers the peculiar advantages associated with each type, and a corrective for the characteristic deficiencies of the other types. But French agriculture was very far from ideal; the comparative figures of yield prove that definitely. The most plausible explanation appears to be that the French, in agriculture as in manufacture and business enterprise in general, did not possess the qualities which enabled them to make the most of organization on a large scale.

COMPARISON OF SMALL AND LARGE HOLDINGS

The government in 1908-09 investigated the condition of agriculture in the country with regard particularly to the small holdings, and asked a specific answer from each department to the question: "Is the small holding inferior, equal, or superior to the large?" A categorical answer to the question was of course not easy, and some answers were so qualified that they have to be left out of account. Even so there were enough specific answers, supported by concrete facts, to make the results very significant and they are reproduced here. The table is to be read in this fashion: In — departments (omitting Corsica) the small holding was — to the large.

	<i>Equal</i>	<i>Superior</i>	<i>Inferior</i>	<i>Not Classed</i>
In implements and methods	11	27	29	14
In economic results	8	47	16	13

The small holding was so nearly equal to the large in equipment and methods, so far superior in results obtained, that one of two conclusions is inevitable: either the small holding was relatively efficient or the large holding was relatively inefficient. The latter solution, already indicated by comparative figures of crop yields, is confirmed by the judgment of competent authorities. A writer of the period (1912) thought that of the large

estates which were not let out in pieces a few but not many were examples of the model large holding, with progressive methods and generous outlay of capital. Many of the wealthy middle class, manufacturers and business men, who attempted to manage their estates did badly. He found the medium-sized holdings inferior to the large in equipment, inferior to the small in the quality of their labor; some prospered in the hands of efficient farmers, but a large proportion of them were ill organized, lacking competent direction or adequate capital.

IMPORTANCE OF PEASANT CLASS

Even in economic efficiency, therefore, the proprietors of large and medium-sized estates were at best not so far superior to the small landholder as to deserve detailed consideration, and the small landholders were so incomparably more important in the social and political aspect that the remainder of this chapter will be devoted to them. An American writer (Perkins) called attention to the current conception of the French national characteristics—wit, frivolity, fickleness, a readiness for political change—and the contrast of this idea, based on the traveler's view of the Paris boulevards, with the real France. The French peasant, the most important figure in the most important occupation, presented the complete antithesis of those characteristics. An eminent Frenchman declared his people to be the most *sérieux* (almost, not quite, the English "serious") nation in the world, in contrast to the English, the keynote of whose character he found to be frivolity!

INDUSTRY

The outstanding economic merit of the French peasant was his unflinching industry. "An instinct for work dominates the peasant, an instinct irresistible as a natural law which binds him to the soil by a tie amounting almost to devotion." In the cultivation of those products which require only patient toil and unflinching personal attention the French peasant was supreme; he needed to fear no competitor in raising poultry and eggs, in growing flowers or vegetables for the market which the towns opened to him. But his field was limited, both in the physical and the metaphorical sense. He could follow tradition, but unassisted

he was unable to keep pace with the advance of scientific agriculture, and unable or unwilling to invest sufficient capital to get the best returns. The application of modern farm machinery was hindered not only by the small size of his holding, but also by the fact that it was still often composed of separate fragments. Humorous stories were told of fragments so small that in the process of division they finally vanished, of a father who rewarded his son every time he headed his class by buying him a bit of land, because it was cheaper than to take him to the circus. A farm of moderate size might consist of many scattered pieces. The consolidation of these fragments, as it had been accomplished in other countries, would have greatly enhanced the value of the land, but was relatively rare in France because each peasant feared lest he might lose by the transaction.

THRIFT

The indomitable persistence of the French peasant showed itself not only in his devotion to work but also in his passion for saving. Small as might be the return from a little farm, the family expenditure would be kept still smaller. If often, as unquestionably was the case, this was at the sacrifice of economic efficiency, yet time and again the thrift of the people has been the salvation of the nation. The saving often took the form of hoarding. A notary in the '80's received from a peasant in payment for a piece of land gold pieces of the coinage of every government from that of Louis XVI; some of these must have been hoarded for 90 years. To a surprising extent, considering his cautious nature, the French peasant invested in bonds and stocks, as these securities became more common. But the one investment which above all others appealed to him, which in many cases actually enthralled him, was land. Many peasants lived to save, and saved to buy land. All through the nineteenth century they were extending their holdings, nibbling bits off the medium and large estates. Balzac called the peasant "that indefatigable mole, that rodent which undermines and disintegrates the soil, parcels it out and divides an acre into a hundred fragments. . . . This essentially unsocial element, created by the Revolution, will some day absorb the middle classes, just as the middle classes have destroyed the nobility. Lifted above the law by its own in-

significance this Robespierre with one head and twenty million arms is at work perpetually." Balzac's book, *Les Paysans*, translated under the title "Sons of the Soil," was the account of the proprietor of a large estate whose land was coveted by the peasants, and whose life was made so difficult by them that he had finally to surrender; the book is fiction but was based on established facts.

NARROWNESS

Balzac disliked the peasant because, as said, he was unsocial, because he was inevitably narrow, because he was usually ignorant. He did not share in the development of civilization, its books and newspapers and all its finer products. With his eye on the ground he had no interest in or understanding of the larger problems of the day, economic, social, or political. Devoted to Napoleon, with whom he associated his rights to land, and oblivious to the passage of time, he hailed Napoleon III a half-century later as "the Little One" come back, with a lusty *Vive Marie Louise* for his wife! Even in the twentieth century the examination of recruits to the army showed a considerable percentage of illiterates, and profound ignorance of French institutions and French history. One recruit described Austerlitz as one of Napoleon's ambassadors; another held the Maid of Orleans to be a French queen who was burnt by the Prussians in 1871; a third described Victor Hugo as a lawyer and composer who had discovered vaccination. If, as has been said, the peasants made universal suffrage possible by their conservatism, they made it inefficient by their ignorance and lack of interest. They were a ready prey to the professional politician, in matters both of domestic and foreign policy. If they had been consulted, the war of 1870 would never have taken place. Bismarck said that the French soldiers with whom he talked had only one great desire, to return to their fields: "If one only listened to the French peasant there would never be any war."

QUESTIONS

In what two important respects did the French organization about 1910 appear less advanced than that of other leading countries?
What are other indications of a less progressive organization?

Does economic activity or material welfare supply any index of happiness?

What were the aims and results of the French Revolution?

Sketch the course of France in the nineteenth century.

What was the effect of the French Revolution on agriculture?

What was the distribution of land holdings after the Revolution?

What were the nature and effects of the usual leases?

What were the terms of metayage, its good and bad sides?

Illustrate the backwardness of agriculture. Explain the low yield.

Characterize the plow and the plow team, and explain their inefficiency.

How did expenditure of labor compare with that in England?

What was the gross yield per acre of land used in different ways? (See U. S. Census for comparative contemporary figures.)

What was the advantage of artificial grasses over fallow or pasture?

What do the statistics of wheat yield show as regards rate of progress, and absolute level attained?

What evidence of the prevalence of small holdings is supplied by estimates (a) of landed properties, (b) of net incomes, (c) of agricultural classes?

Summarize the evidence as regards number of holders of different classes and size of farms.

Distinguish three classes of agricultural implements: (a) relatively common, (b) not infrequent, (c) rare.

Explain why the individual farm was commonly composed of scattered pieces.

Illustrate local self-sufficiency. Indicate exceptions.

Compare the condition of labor with that of later times.

Illustrate the characteristic diet of laborers.

Illustrate their housing.

To what difficulties was French agriculture exposed after 1870?

Indicate the course of improvement, and reasons for it.

How did French agriculture compare with that of other countries just before the first World War?

What reasons can be given for its inferiority?

What was the distribution of land holdings, 1908?

What was the relative efficiency of large and small holdings?

Contrast Parisian and French qualities.

Illustrate economic merits and defects of the French peasant.

Illustrate his thrift.

Illustrate his political merits and defects.

READING

A standard book on the economic history of the nineteenth century is J. H. Clapham, *Economic Development of France and Germany, 1815-1914* (Cambridge, 1921). The student will find, in addition to references below, good descriptions of French agriculture in Agnes Duclaux,

The Fields of France (London, 1902), and Rowland E. Prothero (Lord Ernle), *The Pleasant Land of France* (N. Y., 1908). French fiction supplies admirable collateral reading; for suggestions see "Peasant Studies in French Fiction," *Edinburgh Review*, 1902, 205:299-325.

The French character. (André Siegfried, *France, a Study in Nationality*, New Haven, 1930, chap. 1, pp. 1-23; or in *Atlantic Monthly*, Dec., 1929, 144:744-754.)

Development of European agriculture. (Birnie, chap. 2, pp. 14-33.)

The French peasant after the Revolution. (Mme Mary Duclaux, *Contemporary Review*, Oct., 1903, 84:498-510)

French agriculture to 1848. (Clapham, chap. 1, pp. 6-28.)

Metayage. (Lord Ernle, "Farming Partnerships in France," *Nineteenth Century*, 1920, 87:439-454; Higgs, in *Economic Journal*, 1894, 4:1-9)

French agriculture, 1848-1914. (Clapham, chap. 8, pp. 158-194.)

Village life in France. (*Contemporary Review*, 1892, 61:65-72; 1894, 65:376-391; 1897, 71:424-431.)

CHAPTER XV

France: Manufacture

Facts were presented at the beginning of the last chapter to illustrate the tardy progress of France in economic organization, as compared with England or Germany. Professor Clapham raises the question whether France may properly be said to have experienced at all an industrial revolution, so gradual and long-drawn-out was the development, and he shows that the period of most active change did not follow closely after the period of the great inventions but was deferred to the very end of the nineteenth century.

CONDITIONS IN 1851

A census taken in the middle of the century, 1851, gives a means of appraising progress up to that point. Most of the people (57%) were still engaged in agriculture. Just a quarter (25%) were returned as occupied in manufacture. But most of these, roughly 3 out of 4, were on the handicraft stage, providing food, clothing, and building for the local market of the village or the town. They differed little in the technique which they employed, in the simplicity of their organization, in the breadth of their market, from their prototypes of the Middle Ages. On the average, in most trades, a "master" employer had 2 employees working for him; the typical concern was obviously a little shop. Only in the clothing trade did the number of employees rise to 4 times the number of masters.

The census distinguished from this petty industry another class which was denominated *la grande industrie et les manufactures*, comprising about a quarter of the total. The French words suggest "big business," but the fact was far removed from that modern concept. These so-called manufactures differed from the petty industry in that they produced for a broader market than the immediate locality, but their scale of operations was very

little larger. Using the same measure as before, the number of workmen compared with that of employers, most of these manufacturers had an average of 4 or 5 workers to a master. This was true of the workers in iron and other metals, and even of the workers in mines and quarries. Only in the industries which produced the raw metals did the number of workmen per master rise to 6 and 7.

TEXTILES

One group of industries there was, and only one, the textiles, which had risen to a higher stage of organization. In this group the number of workmen per master rose to 15. Numerically the group was very large, including over one-sixth of the total engaged in manufacture (both small and large), and therefore, both as regards quantity and quality, deserves consideration. Its characteristics are illustrated by another set of figures, which omit scattered workers and restrict attention to the establishments in which some degree of concentration had been attained.

<i>Textiles</i>	<i>Number of Estab'ts</i>	<i>Number of Workers</i>	<i>Workers per Estab't</i>	<i>Value Added per Estab't</i>	<i>Value Added per Worker</i>
Hemp, flax . .	5,576	56,167	10	\$1,000	\$140
Cotton . . .	2,394	244,819	102	13,000	130
Wool	2,424	144,146	60	11,000	190
Silk	1,459	165,000	113	24,000	210
Mixed . . .	1,005	85,121	84	15,000	170
Total . . .	12,858	695,253	54	\$9,000	\$160

The vague term "establishment," a verbal translation of the original French, has been retained in the text, since it is clear that the figures refer rather to business firms than to factories, and include a mixture of merchant employers and of factories proper. This dilution of the factory statistics was probably least in the cotton manufacture, in which most of the processes were carried on under the roof of the employer, and probably greatest in the wool and silk industries, in which production was still largely in the hands of out-workers. Making allowance for this imperfection of the material, which forbids rigid conclusions, it is nevertheless apparent that the scale of business operations in this most advanced branch of French industry was still very small.

SMALL SCALE OF OPERATION

In the manufacture of flax and hemp the typical establishment seems to have been a little mill dependent on water power if it supplied any power to its handful of workers. In the cotton manufacture there were already large establishments, employing each several hundred workers, but in that and in other branches of the textiles the typical factory seems to have been one with 50 to 100 workers, at most. The value added by manufacture (value of the product for the year, less cost of raw materials) gives another measure of the modest standard of French industrial enterprises of the period, whether they were conducted by merchant employers or by manufacturers proper. The value added per worker, out of which must be paid not only wages but also other expenses and profits, seems at first incredibly small. The reader must realize however that the official statistics of the time set the average wage in the textile industries at 2 francs a day (\$120 a year); a skilled male worker got more than that, but the women, who were in the majority, got less, and the children much less.

STEAM POWER

The figures giving the percentages of establishments employing steam power seem at first glance impossibly small. The total number of steam engines credited to textile establishments was 1,004; the total number of stationary engines in France at that time was 5,672. It is possible that some engines in the textile mills were omitted from the enumeration, yet in 1878, the first year in which it is possible to compare steam horse power in the textiles and in the total, the proportion was not very different (in thousands of horse power, not number of engines, 91:484). Even when the dilution of the statistics by the inclusion of merchant employers is taken into account the figures remain significant, and will furnish occasion for comment hereafter.

PETTY INDUSTRY

This survey of the condition of industry at the middle of the century leaves us now to review the history up to that point. Of the petty industry, the larger part of the whole, it may be said

with a considerable measure of truth that it had no history. The butcher, the baker, and the candlestick maker pursued their trades in the old fashion, as their predecessors for many generations had done before them. The shoemakers of the town or of the village still worked singly, turning out each a pair of shoes a day for the people of his vicinity; the first shoe factory is said to have been established at Liancourt in 1844. The sabots, wooden shoes, were made not only in town or village, but actually in the forests themselves; one merchant employer in Paris had 1,000 persons working for him in central France (Cantal), turning out 600,000 pairs a year. The French Revolution had swept away in industry as it had in agriculture many of the hampering restrictions of the old régime. The guilds were gone, but their narrowness of spirit still persisted. Workers in some industries (paper, hat, some of the metal and textile trades) endeavored to restrict admission to their sons, charging them a very small fee and others a very high fee for acceptance as apprentices. Time and again the reestablishment of the guilds was proposed. It was argued that there were too many artisans and merchants, that there was an oversupply of manufactured products, that destructive competition forced down prices; the whole argument was medieval in character, aiming to maintain the status of the workman, without regard to the consumer and without regard to progress. The government did not agree to these proposals, and did not interfere so seriously with the conduct of manufacture as the old monarchy had done, but it still tended to superintend closely the course of affairs. It still maintained the assize of bread and the old regulations of the town market, and on occasion it regulated in detail the conduct of an industry.

SLOW DEVELOPMENT

The long period of war after 1789, in which France was partially blockaded, led to the establishment of the beet-sugar industry, and stimulated the growth of the cotton and metal industries. Prohibitive tariffs endeavored to maintain in the following period the development of manufactures. Their growth was at best sluggish. Taking as an index of progress in advanced methods the use of steam, we find the total horse power

of stationary engines in France, including those used both in mining and manufacture, in 1850 was 67,000. At that same date a single industry in England, the cotton manufacture, employed nearly as much steam horse power, 62,940. France did not lack inventors. Papin was the first to apply steam to the movement of a piston in a cylinder. Cugnot constructed a locomotive in 1770. Frenchmen were applying steam to navigation at the very time when Americans and English were carrying on their experiments; Frenchmen were the first to suggest the use of the screw propeller. Yet in the practical development and application of steam power the French lagged far behind the English. They lacked an organization in which the spirit of business enterprise would adopt an idea and make it a practical reality. The first steam engines introduced in France in the eighteenth century (1726 and following), were made and set up by Englishmen. Native Frenchmen, it is true, the brothers Perier, took up the inventions of Watt, and established the first factory for building steam engines in France; before 1815 a considerable number of steam engines had been built and applied to manufacture. Yet a well-informed Frenchman testified in 1824 that in most parts of France the principal manufactures employed water power, and if the official statistics of 1851 are to be trusted the proportion of textile establishments employing steam power was still small even then. In Alsace, as said above, some of the early textile mills were run by oxen, and many were run by horses even in the second quarter of the nineteenth century.

It is not practicable here to review the course of the many different manufactures, but we may note some features in the development of those which were of the greatest interest in the period of the Industrial Revolution.

COTTON

The cotton manufacture lagged far behind the English. Its output in 1835 was estimated at only one-quarter of the English, and the reasons for its backwardness, as seen by an English writer of the time, are significant. (1) French factory labor lacked perseverance and regularity. "The weavers, and even many of the spinners, cannot be induced to work the year round at their looms or mules, but in the months of summer and vintage turn

to agricultural pursuits for relaxation." France kept long its rural character; even in 1851 only 1 in 10 of the people lived in a town of 20,000 inhabitants or more. The people were not cut off from the land, as they had been in England, and loved to return to it after separation for a time. The factory workers as a class were less effectively trained. Their wages were considerably less than in England, but the labor cost was fully as high.

(2) The raw materials cost more in France, particularly when they were transported far into the interior. Cotton bought in New Orleans could be landed in Liverpool for considerably less than in Le Havre, taking freight and duties into account, and the Lancashire industry was closer to the sea. Coal, particularly, cost more in France than in England, often 3 or 4 times as much at the factory, partly again because of higher customs duties and local dues, but mainly by reason of the need of transporting it further from the mine. (3) The capital charges were heavier in France than in England. A steam engine of 30 horse power costing \$7,000 in England would cost \$11,000 in France; the equipment with spinning machinery to be run by an engine of that size would cost \$54,000 in England, \$85,000 in France. Power looms were not introduced until long after they had been used in England, partly because they cost so much more, partly because hand labor was so much cheaper. (4) The French factories were smaller than the English, and scattered through the country instead of being concentrated as they were in Lancashire. The French could not attain the advantages of specializing in standard lines, as the English in their spinning industry had done relatively early. The English were already producing for a world market, and exported as much in a fortnight as the French did in a year. (5) The policy of high protection, even prohibition, did not keep out smuggled goods to compete with the French product, while it increased the costs of manufacture, and narrowed the market. Political instability discouraged investment, and raised interest charges.

IRON AND STEEL

Another industry by which to test the industrial progress of France is that of iron and steel. At the middle of the century its output, measured in tons of pig iron, was under one-quarter that

of the English industry. It started the century with an organization and technique which had remained substantially unchanged for hundreds of years. The iron was smelted in little charcoal furnaces, scattered through the country near readily accessible ore deposits. In the region of the Pyrenees the old Catalan furnace was still in use, producing wrought iron or steel directly from the ore. These old methods consumed an extravagant amount of fuel, and made the product too expensive for general use. The use of coke was introduced before 1800, but spread very gradually; even near the middle of the century (1846) less than 1 in 4 of the furnaces used coke for fuel. At that date the price of a ton of pig iron was, in round figures, \$18 in Glasgow, \$30 in France. Such a difference in price could be maintained, of course, only by a very high protective tariff, and English authors calculated that the French lost a million pounds sterling a year by the extra cost of the iron used in their plows alone! The effect on factory equipment will be noted below.

The development of the industry can best be illustrated by the figures of the accompanying table.

<i>Year</i>	<i>Pig Iron</i>		<i>Wrought Iron</i>		<i>Steel</i>
	000 Tons	% Charcoal	000 Tons	% Charcoal	000 Tons
1819	110	98	70	99	
1825	200	98	140	71	5
1830	260	92	150	69	
1835	290	84	210	52	6
1840	350	78	240	43	7
1845	440	60	340	32	12
1850	420	55	360	23	9

ANTIQUATED METHODS

The figures show, obviously, a considerable growth through the period, a growth much more rapid than that of population. On the other hand, as said above, France at the end of the period had an output less than a quarter of the English, and when comparison is made with the figures of production about 1900, evidently the country had made but a bare beginning. The most significant figures are those which show the persistence of charcoal as a fuel. Protected from competition by the tariff and less favored by its supply of mineral fuel France clung to antiquated methods long after England had abandoned them. The rail-

roads, with their superior efficiency in the transportation of bulky raw materials and with their demand for metal, really introduced France to the "iron age" just about the date at which the table above closes. Statistics showing the organization of the separate branches in metal production and metal manufacture in 1851 list a total of 2,308 establishments still employing 1,918 water motors and only 411 steam engines. In a dozen different branches of the industry only one, that engaged in the manufacture of machinery, employed more steam engines than water wheels.

MACHINERY

The manufacture of machinery is that branch of industry by which the mechanical progress of a people can best be rated, and the means of comparing English and French in this regard is furnished by the evidence before an English parliamentary committee in 1824. The French manufacture was prejudiced, in the first place, by the higher cost of iron, reckoned roughly at double the price in England. The coal needed for iron working cost several times as much in France as in England. The equipment of the shops was inferior. The French, to emphasize the fact by repetition, did not lack inventive capacity. In their suggestions for improvement of the tools for metal working they were pioneers. Taking for illustration the three fundamental machine tools, the lathe, the planer, and the miller, all three of these were developed on lines which the French had suggested in the eighteenth century. Even the idea of the system of manufacture with interchangeable parts was French in origin. Thomas Jefferson, when minister to France in 1785, described the plan of a French inventor for manufacturing the locks of muskets on this system, and Jefferson himself assembled several locks from the parts. Yet none of these ideas reached the stage of practical application in the country of its origin, and the French had later to import from other countries the machines or the methods which they had been the first to propose.

LABOR

French labor in the machine trades was inferior to the English. Given enough time, a French artisan could turn out as good a

piece of work as an Englishman. But a French business man testified that if he had to place an order for spinning machinery he would expect to get the product from an English shop in one-quarter or less of the time which a French shop employing the same number of workmen would require. "This speed should be attributed in part to the superior skill of the workmen, and still more to the great variety of tools in use in the English shops." An English engineer testified that it paid better to employ an English smith at 10 or 11 francs a day than a French smith at 4 francs; the difference between them lay not merely in the quality of their work, but in the quantity which either could turn out in a given time. Actually the manufacture of engines and machinery in France at this time was largely in the hands of English employers and English workmen, and the labor cost was 25 to 30% higher than in England because the English workers had to be tempted by high wages to leave home. Manby & Wilson, manufacturing steam engines at Charenton, employed about 200 Englishmen, and used French workers only for common labor. The same Frenchman whose testimony has been noted above estimated that in the two years preceding, some 16,000 workmen had emigrated from England to France. The manufacture of engines and machinery could be conducted in France only under the protection of a high tariff, and at prices which imposed a serious burden on the manufacturer who was purchasing equipment for a factory.

CONDITION OF LABOR

The condition of industrial labor in this period still corresponded pretty closely to the theories of classical economists and later socialists, that the laborer received just about enough to maintain life and to bring up a family. An adult factory worker might receive 2 or 3 francs a day, say \$120 to \$180 a year. The family budget of such a worker would resemble the budget of the agricultural laborer given in the preceding chapter, with most of the expenditures distributed to cover the primary necessities. Bread alone absorbed a third to a half of all that the laborer had to spend. The price of wheat varied, of course, in different times and places, but fluctuated in general about the level of \$1.50 a bushel. If we accept the estimate of a German economist that a

people living mainly on bread requires about 400 pounds of grain a year per head, and make the necessary calculations, we find that even the worst paid laborer had more than enough to support a family. The growth of population in the period is of course evidence of the fact. The complaint of drunken riots in the labor class is further evidence that workmen spent money on nonessentials, whether they could afford to or not. The industrial worker of the early nineteenth century was unquestionably better off than his predecessor of the eighteenth. The improvement in that period was, however, vastly less than that which was reserved for the succeeding time.

HOURS

The normal day in the textile factories was assumed to be 12 hours of actual work, to which must be added the time allowed for meals. This standard was, however, not infrequently exceeded and even the journeyman artisans, working outside the factories, were used to a longer day. They would begin at 5 and keep at work until 8 in the evening, taking out an hour each for breakfast and for dinner. These long hours may help to explain the slow pace of the workmen, and the complaint of Sunday drinking. The government as yet did little to protect the working class. It forbade any effective combination on their part to raise wages or to improve the conditions of work, and gave employers a favored position in any dispute over wages.

Description in preceding pages of conditions in France down to about 1850 shows a country which had been as yet little affected by changes arising from the Industrial Revolution. Cut off from international trade and competition by a tariff so high as often to be prohibitive, the industrial organization was still in the main like that of centuries preceding. The new factory industry engaged but a small part of the people, made little use of the new source of power, trailed slowly after the leader, England, in the improvement of processes and machinery.

In the period from 1850 to 1914 the process of change was more rapid, and was most rapid at its close. It will be convenient, for the purpose of a preliminary survey, to break the period into three parts, and to note the general influences which characterized each.

DEVELOPMENT AFTER 1850

Between 1850 and 1870 the mileage of railroads grew from little over 2,000 to nearly 10,000, almost five-fold, and, what is still more significant, railroad freight service (ton-mileage) increased over ten-fold. Industries which had grown up in France at a considerable distance from coal mines and from the sea were only now in a position to share the advantages which England had enjoyed even before the railroad was introduced. The development of ocean transportation in this same period made another contribution to the opportunities for the supply of raw materials and for the growth of manufactures depending upon them. Finally, a reform of the policy of high protection made it possible for the first time to take full advantage of the opportunities for commercial intercourse. Napoleon III desired to abolish prohibitions and to reduce duties both on raw materials and finished goods, but found the legislature obstinately opposed to his projects.

THE COBDEN TREATY

If he could not make laws he had absolute power to make treaties, and the Cobden treaty of 1860 (so-called because it was the work of Richard Cobden, acting for England, and of Michel Chevalier acting for France) was a sweeping measure of reform. It was the first of a series of treaties with other states, in which the "most favored nation" clause granted to all the same advantage which had been conceded to one. French manufacturers had foreseen nothing but disaster as a result of the reduction of the tariff. Some interests, indeed, did suffer, but French industry in general maintained itself and gradually developed on a higher level of efficiency.

WAR OF 1870

The next period, 1870-90, began with a war which cost France heavily in men and in money, and which cut from the country two provinces, Alsace and Lorraine, in which flourishing manufactures had developed. The German Empire which rose from this war showed in its rapid industrial development the psychological stimulus of military and political success, and it is not

unreasonable to explain the relatively slow advance of France in part by the burdens resulting from the war and the psychological influence of defeat. As indicated on an earlier page, however, war losses were not crushing, and other factors played a part in retarding progress. Hard times were general in the period of falling prices after 1873, and France was not the only European country in which the manufacturers complained that business was bad.

MORE RAPID DEVELOPMENT AFTER 1890

In contrast with the slow and gradual development of earlier decades the last period, from 1890 to 1914, was marked by an advance so rapid as to do much to close the gap between France and the leading industrial countries. The industrial output (measured in physical units, without regard to prices), nearly doubled. An index of this acceleration of progress is furnished by statistics of the steam power employed in manufacture and mining. (Figures, in millions of horse power, give averages for five-year periods centering about the date noted.)

1875	0.4	1895	1.2
1880	0.6	1900	1.8
1885	0.7	1905	2.3
1890	0.9	1910	3.0

Some reasons can be given for the quickened pace of the industrial development in this last period, although it is difficult to determine their relative importance. In the first place, as appeared in the course of English history, the hard times which followed the crisis of 1873 were succeeded, at the close of the century, by a period of rising prices and active business all over the world. France, which had learned some lessons of industrial efficiency in a period of relatively free trade, now applied its experience behind the shelter of a tariff wall. There was a gradual return to protection after the late '70's, culminating in the high duties of the Meline tariff of 1892; the manufactures which developed after that date were devoted largely to the supply of the home market. Progressive leadership, which had been notably lacking in French industry in the earlier periods, developed latent possibilities. Siegfried, writing in 1931, dates from a period beginning over 30 years before a movement into industry and "big

business" of some of the ablest members of the middle class who previously had sought to satisfy their ambitions in military or administrative careers. The decline in prestige of the army involved in the Dreyfus case may have played a part in this movement.

DECLINE IN BIRTH RATE

Important as is this evidence of the rise of a new spirit of business enterprise, the reader should be warned not to exaggerate its scope. Taking the French people as a whole, industrial as well as agricultural, they remained extraordinarily constant to the traditions of the past. Reference must be made to an element in French life too big and complex to be treated here in detail but too significant to be omitted entirely from consideration. This is the decline in the birth rate, which resulted toward the end of the century in an almost stationary population. The reason for this decline, long a matter of dispute, was indicated by a Finnish statistician, who compared the proportion of births in different regions with the proportion of those who took out insurance against fire and hail. In departments in which such insurance was usual, he found a low birth rate; in departments in which the majority had not protected themselves by insurance, the birth rate was much higher. Similarly, he found an inverse correspondence between the proportion of people with accounts in savings banks and the number of births: the more general was the practice of saving, the less children were born. Long since, of course, the decline of the birth rate in France has been accepted as the result of conscious and voluntary restriction. Instances are mentioned of marriage contracts specifying the number of children to be reared, and of divorces arranged because too many children were born. A French author cites as characteristic a newspaper romance ending, "They were happy . . . and they didn't have any children."

BIRTH RATE IN DIFFERENT CLASSES

When the statistics were analyzed more carefully, it was found that the birth rate varied greatly in different economic and social classes. In cities with a large factory population it was relatively high. The proletariat (the word, by derivation, means "breed-

ers") had nothing to lose, and took little thought of limiting their families. In country districts, where the peasants were poor and their farms very small, the attitude of the people was the same. When, however, the peasant held more land and attached more importance to his social position, he was inclined to limit his family to prevent the dissipation of his little estate. "He loves his land more than his family," "His dream is to have a sole heir marry an heiress," "He is quite willing to let his name disappear if his only child is a daughter": in such terms the peasant of this class was characterized. Likewise the population of those cities which had been little affected by the development of manufacture, where the people still made their living in the old fashion, as artisans, shopkeepers, in the professions or in office, showed very low birth rates. These were the home of the true *bourgeois*, the type which was not confined to them but which marked and still marks a large proportion of the French people. Siegfried suggests as a definition of the term "a man with some accumulated savings," and expands it by a statement of the bourgeois ideal: "To acquire a little property, a little house, a little business, a little income from investments, is the dream of millions of French people."

FRENCH BOURGEOIS

What is there peculiarly French in this ideal? In fairness to M. Siegfried (who, in fact, had no idea of presenting a formal and complete definition), the characteristics of the type must be analyzed in some detail. One element in the type is certainly prudence, caution, the determination to "play safe." It shows itself in all the relations of property and family, in the custom of the *dot*, dowry, in marriages, in the determination to preserve what property the family has, to add a little to it if possible. An author in the *Revue de Deux Mondes* said: "We live to save in France, not save to live." Other countries have a greater aggregate wealth, some have more wealth per capita, few if any have such a general distribution of wealth among the lower middle class.

A second element, closely connected with the first, is the prudent limitation of ambition. Let us run over again M. Siegfried's statement of the bourgeois ideal, to note the importance of the word so often repeated: "To acquire a little

property, a little house, a little business, a little income from investments." Young people of the middle class are not so much encouraged to become rich as exhorted not to die poor. The German economist, Sombart, thinks that in economic history two distinct motives to economic activity have shown themselves, in the earlier period, say that of the Middle Ages, the desire to make a living, in the later period, that of capitalism, the desire to become rich. It may be, as has been suggested, that France is happy beyond other countries, and it may be that this is the result of a modest restriction of ambition. Certainly no one could ask more of life than "a good living." At any rate, this is the aim of a large part of the French people.

However much this aim may conduce to happiness, it does not urge a people to economic progress. It is a sure sign that the society is still ruled by tradition, by standards of the past which disregard the possibilities of a future. Adherence to tradition is certainly a third element in the make-up of the French middle class. The economic problem, as it presents itself to them, may be sketched as follows: how to make a living, in the place in which one was born, in some established occupation. Emigration from France is and has long been notably small. Internal migration was of slight dimensions. A servant girl who took a place in another department (there were 87 departments in France) lost her character. The census of 1896 showed that three-quarters of those employed in manufacture, the occupation most likely to stimulate a change of residence, were working in the department in which they were born.

TENDENCY TO INDIVIDUAL ACTIVITY

We must be prepared, then, to find France, even at the end of the nineteenth century, a country still old-fashioned in its organization. The people were strongly individualistic, not so much in a positive, assertive sense as in their distrust of economic relations which would tie their fortunes up with those of others. The French statistics supply an interesting indication of this bent. They classified the whole population gainfully occupied according as they were working alone, or in "establishments" as heads or underlings. An establishment was defined as consisting of at least two persons working together. It might, for

example, consist of a man and his wife, if they both worked; they would be rated as two heads if they had no employees. Figures are presented here for two dates at the turn of the century, and for a date after the war, in a period which will be considered later; they are given in percentages, for convenience of comparison.

	1896	1901	1921
Working alone	23.6	21.7	15.9
In establishments			
Heads	23.5	25.5	30.3
Employees	51.4	51.2	51.2
Out of work	1.5	1.6	2.6

SIMPLICITY OF ORGANIZATION

These figures, it may be well to repeat, cover the whole working population, those in agriculture, trade, and other occupations, as well as those in manufacture. Taken altogether, they picture an extraordinarily simple organization. Nearly a quarter of the people worked entirely by themselves, with no one above to direct them, and no subordinates to be directed. Another quarter was composed of people who were their own masters, whether or not they shared their independence or had others under them. Just over half worked for others, receiving wages or salaries. The average "business firm" in France, if we strained the statistics to interpret them in this way, consisted of one head and two subordinates, a unit of three persons. Actually, of course, the mixture of occupations makes such an interpretation improper. Nearly half of the establishments in agriculture, about a quarter of those in trade, had no employees; they consisted of the characteristic French unit, a married couple sharing the labor of an enterprise.

SIZE OF MANUFACTURING ESTABLISHMENTS

Another set of statistics, restricted to manufacture proper, affords the means of judging the size of industrial establishments, and permits a comparison with American conditions.

The figures refer, in France, to the year 1896, in the United States to 1899, so that the difference in time is almost negligible. This is the most recent date for which a comparison of the two countries is possible; after 1899 the American census of manu-

factures abandoned the attempt to include the hand trades, and even in that year omitted so many scattered individuals that the figures for people working without employees are valueless. The

<i>Number of Employees</i>	<i>Number of Establishments</i>		<i>Percentage</i>	
	France	United States	France	United States
Working alone	1,505,853			
No employees	37,413	110,510		
1 to 5 employees	501,668	232,726	88	58
6 to 20 employees	49,173	112,138	9	28
21 to 50 employees	10,904	32,408	2	8
51 to 100	3,709	11,663	0.6	3
101 to 500 employees	2,997	11,303	0.5	3
501 to 1,000 employees	258	1,063	0.05	0.26
Over 1,000	94	443		
Total	568,803	401,744		

figures for establishments in which labor was employed are fairly reliable, and are significant. In both countries the little shop with 5 employees or less outnumbered establishments of larger size. In France, however, this petty unit absorbed so much of the total that the larger establishments appear relatively unimportant. The small factory, employing 6 to 20 workers, was relatively 3 times, the larger factory with 21 to 50 was 4 times, factories still larger were 5 times as numerous in the United States as in France.

FINANCIAL ORGANIZATION

Relatively few of the industrial establishments in France were organized in the form of the joint stock company, which lends itself to unlimited expansion. They were in large part family enterprises, passed on from one generation to another, with a jealous exclusion of participation by outsiders. A family which prospered in manufacture would invest its capital often not by the expansion of the original factory, but by buying or building other factories, sometimes in the same industry, sometimes in a related and sometimes in quite a distinct industry. Economists long ago recognized that France suffered less than some other countries from commercial crises, and did not need to seek long for the reason; the organization was less complex and delicate, and operated under a lower pressure. When the people did invest in securities, not in real estate, they preferred government

bonds, after them high-grade railroad bonds, and still later in order of preference seasoned stocks. The banks were largely investment institutions, with very conservative commitments in financing trade, and with little inclination to promote new enterprises.

CONTRAST WITH ENGLAND

We must not expect to find, therefore, in the France of this period, manufactures developed along the line of "big business," marketing great quantities of standard goods at the low prices resulting from an extensive mechanical equipment and an elaborate organization. A comparison of the exports of England and of France just before the war shows a marked contrast. The bulk of the English exports, as has been seen, was the product of a few great industries. French exports were scattered over a wide field; the largest items in the list, manufactures of silk and of cotton, did not in either case amount to 6% of the total exports. In almost every class the French did export something. The individual skill and taste of their workmen enabled them to offer products of quality which removed them from the competition of pure machine work. In some lines, such as clothing, millinery, fancy goods, they were notably strong. The characteristics of their work can be illustrated by a survey of some of the important industries.

SILK

The outstanding French manufacture was that of silk. About 1880 France produced more silk goods than all the rest of Europe together. These goods were in large part the product of hand work. In the region of Lyons and St. Étienne silk working was an hereditary employment, passed on from generation to generation. The workers felt a love and pride in their trade, and were celebrated all over the world for their skill and taste. The typical weaver owned one to three hand looms, with journeymen working under his supervision. In the last quarter of the century power looms gradually displaced the hand looms, with the substitution of the factory for the family shop. Yet even at the end of the century the number of hand looms was nearly double that of those power driven, and the proportion of hand

to power was higher than in other European countries. Machinery was introduced in the preliminary process of throwing before it was in weaving, but even in this branch of the trade factories developed on only a small scale. At the turn of the century French manufacturers were complaining of the competition from Germany, Switzerland, and Italy, and asked for protection against the cheap machine-made products of those countries.

COTTON

If cotton ranked alongside silk in the French export trade, it must not be assumed that the industry was equally strong. French silks were marketed all over the world. French cottons could be sold only in small quantities outside the protected market of the colonies. Here again the French by reason of the special quality of their work could hold their own in particular lines. Even so far back as 1824 an English cotton manufacturer had testified that in the production of some specialties the French were unexcelled. So in 1913 the French could market some of their lace, embroidery, passementerie, and tulles even against the resistance of the high tariff of the United States. In staple goods they had to rely upon the protection of the home market. They were still behindhand in attaining the advantages of the large, highly organized, and thoroughly mechanized units of production. Even in 1885, over one-third of the cotton looms were hand looms. Even after 1900 one-fifth of the knit goods were made in the homes of the workers, by that class of "framework knitters" which had died a lingering death in England long before. Even in the factories reliance was placed on labor rather than on machinery, when comparison was made with the English or American practice. Most of the factories were owned by individuals or by private associations; they were smaller than English factories of their class; they lacked the economies of standardization, and had no such efficient merchandising organization as English manufacturers enjoyed.

WOOL

The manufacture of woolen products does not, as has been seen, lend itself so readily to mechanization as the manufacture

of cottons. When the Cobden treaty of 1860 opened the market to the competition of the English, weaving was still almost altogether a hand process in France. Some branches of the industry were forced to improve their methods and lower their prices to maintain themselves. On the other hand, in the manufacture of short wool (as flannels) France was actually superior to England, and the quality of some worsted products was so high that they were sure of a market anywhere; the English recognized their superiority in beauty of texture and of color. In the later history of the industry these conditions continued; some branches of the industry manufactured for the home market, under the protection of a tariff, while others built up a large export trade. The French were recognized leaders in the manufacture of women's dress goods, in which art and finish and draping qualities were of the first importance; they actually exported half or more of their product to England. Some of the best of these fine fabrics were still being woven on hand looms down to the first World War; such weaving was still the major occupation of some villages in the region of Cambrai and St. Quentin, in the heart of the war zone. Factories found it hard to compete with the product of individual workers who turned out ever-varying patterns in small quantities, and who managed to give a personal touch to the work which the machine could not imitate.

IRON AND STEEL

In the production of iron and steel the peculiar merits of French individualism had an unfavorable field. Even in 1850 the metallurgical industry had developed to a state in which mass production in units of considerable size was essential to efficiency, and the inventions of Bessemer and his successors in the manufacture of mild steel intensified the advantages of "big business." The relative freedom of trade following the Cobden treaty of 1860 forced the abandonment of the antiquated charcoal furnace, but did not stimulate such improvement as would enable the French to supply entirely their needs for the metals. In spite of a tariff which was felt as a serious burden by the consumer (rising to 50% and above), the country still imported iron and steel and their products. In the last quarter of the

century progress in production still was slow, to be followed in the first decade of the next century by a remarkable burst of development. Figures giving the product in millions of tons, for five-year averages centering on the date noted, are as follows:

<i>Year</i>	<i>Cast Iron</i>	<i>Wrought Iron and Steel</i>
1875	1.4	1.0
1900	2.5	1.9
1910	4.3	3.1

The rapid development in the last decade before the war resulted from the adoption of advanced methods of production, in which the large plant with all functions integrated took a leading part.

MACHINERY

The relatively high price of iron and steel was, of course, a hindrance to the development of the metal-working trades. Another obstacle, not so obvious but of at least equal importance, was the deep-rooted sense of craftsmanship in the people, which caused them to rely more on manual skill and less on the automatic action of a machine. The work was actually better done, but it was done more slowly and at greater cost. The Pennsylvania Railroad imported for trial a French locomotive which was pronounced by American experts to be a work of art, superior to anything produced in the United States; but the beautiful finish of the bearing surfaces and other mechanical details was attained by treating each part as an individual problem to be worked out by hand. An American motor mechanic who had taken down many French automobile engines said that they were in better condition after 10 or 15 years of service than were American engines 6 months out of the factory. The French mechanic filed and scraped each bearing to an individual fit. In the automobile industry, it is true, some firms adopted American methods, and could compete not only in quality but also in quantity production at moderate prices. In 1913 the value of automobiles exported was higher than that of either wines or woolen products. In general, however, the French machine industry remained in development behind the American, the German, even the Belgian. Manufacturers of machine tools asserted

that they were forced to offer a great variety of designs, because it did not pay to specialize in producing for the restricted home market, and asked further protection against the product of foreign competitors who could offer more prompt deliveries and better prices because they followed the more effective methods bound up with specialization and standardization.

PRODUCTIVITY OF INDUSTRY

The census of 1851 gave a very low figure (\$160) for the value added per worker by the processes of manufacture in the textile industry. Even after 1900 the productivity of French industry, measured in this way, was still low. Figures for 1906, including all branches of industry and including not only wage earners but all actively occupied, gave an average per head for the value added of 1,780 francs (say \$356, using the rough equivalent 5 francs = \$1). In the chemical industry the figure rose to \$800; in the clothing trades it sank to \$250. This figure for "value added," total value of the product less cost of raw materials, cannot be accepted as stating the facts exactly at any time, and it is still less reliable as a measure of comparison between different times, particularly when there is a change, as in the figures above, in the basis of the figures. Yet the one broad fact, that the productivity of French industry increased considerably in the second half of the nineteenth century but still remained low at its close, is certain, even if productivity cannot be so exactly measured as the figures suggest. A comparison of the figures of different countries is still more hazardous, but is interesting and permissible if caution be exercised. The census of 1900 in the United States followed a plan roughly comparable to the French, including in the enumeration the hand trades and the petty craftsmen, and gave an average of about \$870 value added for each person actively occupied. The census of 1910, restricted to factory industry, gave an average over \$1,100.

As the value which manufacture adds to the raw materials must bear the charge of rent, interest, and profits, as well as wages, obviously the wage earner in French industry could hope to receive only a modest compensation. Wages had risen but little in the first half of the century. In the second half, stating the matter in a general way, they doubled. The cost of living,

notably as affected by the fall in the price of wheat, had gone down, so that the worker was distinctly better off. Characteristic wage rates in the region of Paris, where the highest wages were paid, were given as follows in 1893, reckoned for the day of ten hours:

<i>Workers</i>	<i>Wages in Francs</i>	<i>Equivalent in Dollars</i>
Skilled male	7 to 10	about \$1.50 to \$2
Unskilled male	4 50 to 6 50	about \$0 90 to \$1 30
Women	2.50 to 3.50	about \$0.50 to \$0.70
Children and young persons . . .	1 to 3 50	about \$0.20 to \$0 70

An English report of 1909 estimated the weekly money wage paid in the building trades and some branches of manufacture at three-quarters of the English standard, and, as the French worked longer hours, the hourly wage at less than two-thirds of the English. The cost of living was estimated to be somewhat higher in France than in the country of free trade.

PROTECTION OF LABOR

France, following England after a long interval in the introduction of machinery and power, naturally was much later in recognizing the need of protecting factory labor. In the middle of the century, when England was limiting the hours of work to 10 in the textile mills, with efficient officials to enforce the law, France set a limit of 12 hours for all factory work, but did not organize an administration to make the rule effective. Not until 1874 was such an administration provided, and even the provisions then adopted, aiming to limit the labor of children over 12 years (in spinning mills children over 10 were still admitted), were not strictly carried out. At last the government, about 1900, introduced the 10-hour day and the 60-hour week for women and young persons, and prohibited the system of shifts or relays by which men in the textile industry had been still compelled to work 12 hours.

INFLUENCE OF LABOR

These relatively recent reforms were due to an awakened public sentiment, and to the increased political influence of the working class. The right of workers to organize in trade unions was not formally granted until 1884. Before that date unions

had been tolerated in fact, but an organized strike was a penal offense. Even afterward unions did not develop anything like the numerical importance or effective organization of the English unions. The interest of the working class was diverted in large measure to revolutionary socialism, and showed itself in political rather than in industrial relations. Representatives of labor became an important fraction in the Chamber of Deputies. They won a number of reforms in factory regulation and in social legislation. In spite of their radical principles, however, as Professor Clapham points out, they touched the traditional rights of property to but a very slight extent. The regard for property of the French *bourgeois* was indomitable.

QUESTIONS

What was the relative importance of manufacture about 1850? What was the proportion of petty industry in the total?

What was the average size of establishments in the textile industry, measured by the number of workers or by the value added?

To what extent was steam power employed?

Illustrate the persistence of medieval conditions and ideas in petty industry.

Illustrate and explain the slow development in the use of steam engines.

What reasons were given to explain the backwardness of the cotton industry?

What was the course of the iron and steel industry? Illustrate the persistence of antiquated methods.

What conditions hampered the development of the machine industry?

Compare French and English labor in this industry.

What was the condition of industrial labor in this period?

What were the normal hours of work?

What elements favored development, 1850-70?

Explain the slow progress, 1870-90; the more rapid development after 1890.

How was the decline of the birth rate proved to be voluntary?

Distinguish tendencies of the birth rate in different classes.

What are some of the elements in the French *bourgeois* type? Illustrate.

Illustrate the tendency to individual rather than group activity.

Illustrate the tendency to small-scale operation in manufacture; compare the United States.

Illustrate the less progressive financial organization.

Contrast English and French manufactures

What were the importance and characteristics of the silk industry?

What were the characteristics of the cotton industry?

Explain why the woolen industry could export largely to England.

What was the course of the iron and steel industry?

In what respects were the French strong in machine construction; in what respects weak?

Explain the term "value added in manufacture." What do the figures show regarding productivity of manufacture?

What were, in general, changes in wages and hours of work?

Contrast French and English aims in the labor movement.

READING

Money, banking, investment, 1815-1848. (Clapham, chap. 6, pp 121-139.)

Money, banking, investment, since 1848. (Clapham, chap. 13, pp. 376-401.)

Communications and commerce since 1848. (Clapham, chap 12, pp. 339-375.)

French manufacture to 1848. (Clapham, chap. 3, pp 53-81.)

French manufacture since 1848. (Clapham, chap. 10, pp. 232-265.)

The small industries of France. (Givskov in *Contemporary Review*, Sept., 1904, 86:333-349.)

The labor movement. (Clapham, chap. 10, pp. 265-277.)

CHAPTER XVI

France, 1918-1939

LOSS IN MEN

In the course of the first World War France mobilized 7,935,000 men, one-fifth of the total population, over three-fourths of the males of working age. Of these, at the time of the armistice, 1,282,000 had been reported killed or missing; of the remainder nearly 1,500,000 needed a pension to compensate impaired productive capacity, and of these last nearly half were permanently crippled. Comparing the figures of population in the same area, excluding territory gained in the war, there was a decline in total population of over 2 million between 1911 and 1921, and the loss was heaviest in the class of males between 15 and 50. On the territory enlarged by the acquisition of Alsace and Lorraine the population in 1936 was barely more than that of the France of 1911 (41.9 as compared with 41.5 million). To fill the gap thus formed in the working population France had to enlist the service of foreigners. Spaniards, Italians, and Poles helped to fill the ranks of the agricultural laborers; and Italians, Poles, Belgians, and Spaniards to the number of nearly a million took service in French industry.

LOSS IN CAPITAL

The loss in capital seemed likewise overwhelming. Before the war France was a creditor country, with investments abroad of 45 milliard francs (roughly \$9,000 million), and a net credit in its favor of 38 milliard, after deducting investments by foreigners in France. The country lost a quarter of the whole in the Russian collapse, sold part of the remainder, and incurred new debts abroad, so that it emerged from the war with a net debit in international relations of nearly 7 milliard prewar francs (say \$1,400 million). Immensely greater was the internal debt, representing in the main capital diverted from productive to

unproductive uses. The national debt even in 1914 was heavy, amounting to about 12% of the total national wealth, but in the ten years following it had grown to crushing proportions, and is estimated to have reached 37%. The government struggled in vain to balance the budget, and had to meet the calls upon it by the issue of paper money, with resulting depreciation of the franc.

INFLATION

An attempt under Poincaré (1923) to force Germany to pay the reparations imposed, by military occupation of the Ruhr district, increased expenditure and gave no promise of financial return. There was a "flight from the franc." Faced by the prospect of unlimited depreciation, owners of capital sought to transfer it to other countries where the currency was more stable, and by selling francs depressed still more their gold value. The franc fell to a level of two cents in gold. At last, again under Poincaré (1926), the government took vigorous measures to set its finances in order, and turned the tide. With the return of confidence in 1926-27 capital flowed back to the country, depreciation ceased, the government was able to build up a large stock of gold and to establish the franc again on the gold standard (1928). It followed the only practicable course in abandoning any attempt to return to the former par (1 franc = \$0.193), and stabilized the franc at about one-fifth of its former value (1 franc = \$0.03918); in the text hereafter conversion will be made at the rough rate of (1 franc = \$0.04). The government could not in this way reduce the burden of debts owed abroad and payable in foreign currency, but it did reduce the interest on the internal debt to manageable proportions. It paid bondholders the stipulated number of francs, but the franc was easier to acquire by taxation, and was worth less for purchases than it had been before the war. Obviously such sweeping changes in the value of the unit of currency had far-reaching effects, both economic and social. The experience of Germany, where the depreciation was still more drastic, will afford an opportunity to discuss the general aspects of the process. The particulars of the history of inflation in France are too complicated to be treated here.

RECONSTRUCTION

The main reason why the government was unable, for so many years after the war, to attain settled order in its finances, was the demand upon it for the restoration of regions devastated by the armies. The damage to property in the war zone was estimated at various sums ranging from 10 milliard prewar francs (\$2,000 million) up to fantastic figures. At any rate the government had spent in the work of reconstruction some 60 milliard francs before 1925, and though this sum may have been inflated by extravagance, as it certainly was by the depreciation of the franc in which it was paid, it gives some measure of the loss

OCCUPIED TERRITORY

The parts of France occupied by the enemy were the most advanced and richest of the whole country. The area actually controlled by the Germans after the battle of the Marne was relatively small, only 6% of the whole, but included 14% of the total workers engaged in mining and manufacture. The ten departments immediately affected by the invasion, with 11.5% of the total area, included 21% of the wage earners and 41% of the steam horse power employed in manufacture; they included, evidently, not only a disproportionate share of the manufactures but also the most advanced manufactures. If we include not only the parts occupied and those under fire, but also those parts so near the front as to be disorganized, we find them, all together, to have played the major part in some of the most important industries. Measuring by percentage of the total product which they supplied before the war, the figures are as follows: coal 74, coke 76, pig iron 81, steel 63, copper 94, zinc 76, woolen yarn 81, linen yarn 93, glass 80, sugar 76, alcohol 59, and so forth, for a long list. Some of these products were of vital importance for the support of the armies, and France suffered a serious military disadvantage from the necessity of supplying them from other sources.

ALSACE AND LORRAINE

Against these tremendous losses the war brought to France one immediate and considerable gain, the provinces of Alsace

and Lorraine, which had been ceded to Germany in 1871. They added to the area of France about 3%, to the population over 4%. They included the richest deposits of iron ore in Europe, beds of potash important as agricultural fertilizer, and a little petroleum; Lorraine had some coal and France was given a conditional right to the coal in the important mines of the Saar valley. The two provinces were far above the average of France in their industrial development. Lorraine was strong in metallurgy, Alsace in the textiles (cotton, woolen, artificial silk); together they made material contributions to French capacity in a score of different industries. They promised, therefore, a distinct addition to the industrial equipment of the country, although they also set some difficult problems, for the territorial transfer cut the lines of the commercial relations which the provinces had established when they were part of Germany.

For the moment, at the close of the war, France seemed prostrate. Figures of production for the two years 1913 and 1919 give an impressive realization of the way in which war had drained the economic vitality of the country.

	1913	1919
Coal (million tons)	36	16
Pig iron (million tons)	52	2.4
Steel (million tons)	47	2.1
Freight (daily average of loaded cars, thousands)	60	30
Grain (million metric quintals)	97	50
Potatoes (million metric quintals)	136	77
Sugar beets (million metric quintals)	59	11

From the depth of economic depression which followed the war the country, still bearing the scars of the conflict, rose again. It will be the object of this chapter to discuss the changes in the organization of production which distinguished postwar France from France of the nineteenth century.

AGRICULTURE

In agriculture, still the most important branch of production with reference to the number of persons engaged, a convenient measure by which to trace the recovery is an index number giving the physical volume of the important crops compared with the average of the years 1909-13 as a base, 100. (Figures for

Alsace-Lorraine are included for the prewar years, so territorial changes do not affect the index.)

1919	70	1923	86
1920	71	1924	96
1921	76	1925	100
1922	87	1926	82

A very small part of the decline was due to direct devastation. The government estimated the cultivated area affected by the war at about 11,000 square miles, but of this total most was but slightly damaged. The area in which destruction was practically complete formed less than 4% of the total (say, to visualize the extent, a block 20 miles square); the zone of trenches and heavy bombardment was under 30% (a block 50 to 60 miles square). Compared with the whole cultivated area of France these figures obviously are almost negligible as an explanation of the decline in production. Far more important were the shrinkage of the area under the plow and increase of the unproductive area in parts of France entirely removed from military operations.

LACK OF LABOR

French agriculture suffered not so much from damage to land, or even from dearth of capital, as from loss of men. Of those who had left the farm to enter the army over half a million had died in service, and about half a million were more or less incapacitated. Still another group, approaching half a million in number, men and women, left the farm for work in other occupations. Even with the addition of Alsace-Lorraine, France had fewer persons occupied in agriculture in 1931 than it had, on a smaller area, in 1906. Even in the area of prewar France agriculture was losing ground to industry. In 1931 France was still agricultural rather than industrial. But it is significant that the urban population, which had formed a quarter of the whole in 1846, and about a third in 1876, had risen to over half in 1931 (52.4% in communes with a concentrated group of 2,000 or more).

MIGRATION TO TOWN

The movement from the countryside to the town had shown acceleration before the war, and had already roused serious con-

cern. Later and more slowly than some other countries France also was abandoning agriculture for the factory and the town. If the economic attraction was less effective than in some other countries, because so large a proportion of the country dwellers were landowners, the social advantages made perhaps a stronger appeal. Village festivals, simple at best, are said to have declined in number and appeal in the generation before the war; postal service was slow; telephones were known only by name. Opportunities to make a desirable marriage, a matter taken more seriously perhaps by the French than by some other people, appeared better in the town. The social attractions of town life are so general that they need only be suggested, and were often enough to draw the children even of peasants away from the farm. They were reinforced, in their appeal to the class of agricultural laborers owning little or no land, by strong economic inducements. Farm wages had risen considerably in the period before the war, but offered a man often less than he could earn as a common laborer in the town, and much less than he could earn if he learned a trade.

CONDITION OF LABOR

The average daily pay of the farm hand in 1914 is stated at about 3.5 francs (\$0.70), but was much less in some districts; in the Dordogne, for example, it was about 2 francs (\$0.40), a little more in summer, a little less in winter. The scarcity of labor after the war raised wages, but even in 1930 the annual earnings of an agricultural laborer in most parts of France were about 6,000 francs (\$240). All these figures include anything in the nature of board or lodging received. The living afforded by such a sum must evidently be meager, even if, when a family was concerned, it was supplemented by the earnings of others. The dwelling often consisted, even in the twentieth century, of a single room, lighted by a single window, and with an earthen floor. In this room the whole family lived, ate, and slept, sometimes three or four in a bed. This description, we are assured by a person intimately acquainted with the facts, applied not only to many of the laborers but also to many of the petty proprietors, although of course it must not be assumed as applying to all. The food showed more improvement over previous condi-

tions. Bread, still the mainstay of the diet, was now almost always white bread of pure wheat; a man would eat from two pounds up even to four pounds a day. Meat was no longer a special delicacy, reserved for festivals. It was commonly eaten at least once a day; after the war farm servants expected it at two meals. Everywhere, too, the agricultural workers now expected for drink either cider, beer, or wine.

EFFECTS ON AGRICULTURE

The scarcity of agricultural labor after the war had important social and economic effects. It drew into the country, as indicated above, a great number of foreigners, even from distant Galicia, to work on the soil. It caused millions of acres of arable to be taken from under the plow, to be turned into permanent meadow or pasture. It encouraged the introduction of machinery to take the place, so far as possible, of manual labor. The prevalence of the small holding was still an obstacle to this process, although apparently the very small holdings were being absorbed, perhaps abandoned by agricultural laborers who sold out on leaving for the town. Even in the twentieth century, after 1918, the scattering of a farm in separate fragments added to the difficulty of effective cultivation. Even a small holding might consist of ten or twenty fragments or more, sometimes miles apart, some of them no larger than a quarter of an acre. As the result of investigation the government found in 1929 that this "morselization" (French *morcellement*) of landed property was thought to be injuring agriculture in more than a quarter (28%) of the cultivated area. In the east conditions demanding reform affected over half of the land, in the south and southeast over a third.

CONSOLIDATION

Consolidation of these fragments by purchase and sale and exchange was slow to correct the evil, and there was need of more general and effective action under government control, such as had taken place in parts of Lorraine. The destruction of landmarks in the districts devastated by war seemed to offer a peculiarly favorable opportunity to effect consolidation, and a law of 1919 offered to inhabitants of the liberated regions the opportu-

nity, if they so desired, to have the rearrangement administered by public officials. Most of the villages voted against any change; the people in some cases chased the engineers away with stones. Only in the region of the Somme did some 150 villages, comprising about half the area of the district, consent to the process. As a result the fragments there were reduced to a fifth of their former number, with an increase in average size from 0.8 acre to 4 acres.

IMPLEMENTS

Better evidence of the need of a reform could hardly be offered; even after the reform elaborate agricultural machinery could not be effectively employed. The report of an American trade commissioner (1920) on the market for farm implements in France shows that the most active demand was still for the plow and the harrow; that cultivators and mowers had come into general use; but that the demand for more specialized machinery (binders, seeders, etc.) was still restricted. The report said that the village blacksmith of almost every locality was still a plow manufacturer in a small way, and referred to one place in northern France where, 75 years before, a plow with two wheels and a heavy beam had been established in favor; the farmers of that place still demanded the identical model with the same color of paint. With this evidence of the limitations of the petty cultivator should go some testimony to his merits, in the same report. "The French peasant, steady-going, thrifty and frugal, and far more inclined to do without than to buy beyond his means, almost without exception pays his debts reliably and promptly. . . . The manager of the branch of one American company, whose business for the year amounted to more than \$1,000,000, told me that at the close of the war the uncollected overdue debts amounted to less than \$8."

CHANGE IN THE PEASANT

In 1931 France was still a country of small peasant proprietors. The peasant stock was rooted too deeply and was too strong a growth to be suddenly transformed. Without question, however, it was gradually undergoing change. The influence of the town reached out into the country districts, undermining

old standards and customs. The disappearance of the provincial costumes in many parts of France, and the imitation of city fashions, were an external mark of change, not in themselves important but very significant as an index of the altered attitude of the peasant. His interests now extended far beyond the horizon of the village church tower. He bought and sold in a market which was national or international in extent; his prosperity depended on price changes which were little affected by conditions over which he had any control. He was beginning to regard agriculture not as a career but as a business, not as an end in itself but as a means to an end. He still clung to his land and coveted more land, but competent observers agree that his love for the land had diminished, and that he desired money not merely that it might be hoarded or saved, but also that it might be spent. The school, and then the army life in barracks, stimulated new ambitions and new wants. More money was spent on clothing, tobacco, and drink. Stoves, electric lights, sewing machines, added to the comforts of life. The process of change was intensified in the regions restored after the ravages of the war. Means were lacking to erect the model villages which had been planned, but great improvements were effected, particularly in the installation of arrangements for the supply of electricity and of water. In Picardy, after the war, a peasant of the upper class, holding 75 acres or more, might, if he belonged to the younger generation, have an automobile and a telephone, maybe even a wireless set. Such a standard of living was very far from representative of rural France as a whole. Some districts seemed almost untouched by the new ideas. But between these two extremes it is safe to say that the greater part of the country was affected, and was in a process of gradual change.

WAS THE PEASANT A PROFITEER?

It has been the current opinion in France that the peasants, excluding of course those directly suffering from ravages, actually benefited by the war, enjoyed what was for them a "golden age." The rise in food prices assured them a most favorable market, and it is alleged that they avoided paying their share of taxes and actually accumulated surplus funds with which they could liquidate debts and buy more land. The townspeople

regarded them as profiteers. Such a feeling would be inevitable, but a more careful examination of the facts appears to show that it was unjust. Against the rise in the price of food stuffs must be offset the rise in the costs of production, and the rise in the price of manufactured goods which the peasant must purchase. A peasant, told that he was lucky to get such a high price as the government guaranteed for his wheat, replied that he did not see what difference it made, he had formerly sold a sack of wheat to buy a pair of shoes, and he still had to do the same. If his statement was correct, he was actually a loser, for most of his costs had risen. To draw a balance for all the peasants over the whole period would be a hopeless task. An estimate of the income and outgo of French agriculture in 1923, by a competent authority, would make the net return available for payment on capital invested less than 1%. The same author, comparing the years 1914 and 1928, shows that the prices of farm products (measured in the depreciated franc) had risen about 6-fold, that agricultural wages had risen 6-8-10-fold, and that the price of the requisites of farm life had risen 8-10-fold. Protective duties on farm products were raised as the franc declined, but they were not raised as much as were the duties on manufactured goods.

INCREASED YIELD

The efficiency of French agriculture, measured by relation of the product to the area cultivated or to the people employed, was higher after the war than before. The wheat crop for the average of five years before 1930 was nearly equal to the average prewar crop although the area cultivated had diminished by over 3 million acres. Some of this land which passed from under the plow was not really suited to the cultivation of cereals, and was more effectively employed for grazing or forage. On the land which remained under cultivation the yield increased some 2.5 bushels an acre, partly because only the better land was used, partly because it was better cultivated. Other cereal crops showed similar results. Far more artificial fertilizer was used than in the period before the war. This was true of the phosphates and nitrates, and was especially noteworthy in the case of potash, now to be procured from the beds of Alsace; the amount of potash consumed in 1925 was 7 times the amount of 1913. It profited

the farmer little, however, to improve his methods and increase his output as long as farm costs and living expenses kept pace with or exceeded the money returns which he obtained.

INDUSTRY

An index of industrial production, based on mining and the more important branches of manufacture, and giving the volume of products compared with the base year, 1913, as 100, provides a measure by which to trace the course of industry in the years immediately following the war.

1919	57	1925	108
1920	62	1926	126
1921	55	1927	110
1922	78	1928	127
1923	88	1929	139
1924	109	1930	140

The process of mobilization at the outbreak of the war was a shock of almost incredible intensity to the orderly process of manufacture. Of 100 workers employed in July, 1914, only 34 remained at their work in August. The demand for munitions and military supplies forced a readjustment, and by 1917 the number of employees was actually equal to the prewar number. Prisoners of war were set to work in the mines and factories, as they were in agriculture and transportation. The demand for men at the front in the military crisis of 1918 diminished the number of workers again, and the cessation of military needs after the armistice left the highly developed war industries without a vent for their products. The index of production shows for some years after the war a depression more serious than that which marked the course of agriculture. Mines and factories furnished products less essential than the foodstuffs of the fields, and their complicated organization suffered more from the brutal shocks of the war and of the postwar period. By 1924, however, French industry had reached and passed the standard of prewar years, and in the following period it developed in capacity with astonishing speed. Although the index of agricultural production has not been computed to cover these later years, it is safe to say that at best it remained at about the prewar level, while mining and manufacture rose to an entirely new height.

INDUSTRIALIZATION

France resumed in the postwar period the process of industrialization which was noticeable even before 1900, and which now proceeded at an accelerated pace. We have noted above the tendency of workers to desert agriculture for industrial employments. The foreign trade of the country gives another indication of the shift in relative importance of the two major occupations, although it must be confessed that commercial relations in this postwar period were so disordered that inferences from them must be accepted with reserve. France had been used to import an amount of manufactured goods which was in value much less than the export of manufactures; the proportion had been about 40% in the generation preceding the war. For the first few years after the war France had to rely largely on other countries for manufactured products, but then reduced rapidly its purchases, and after 1923 the proportion fell to 20% or below; the country was selling, in manufactures, 5 times the value of what it was buying.

COAL AND POWER

Another indication of industrialization is furnished by the rapid increase in the application of power to manufacture. In millions of horse power the motive force grew from 2.6 in 1906 to 6.9 in 1926, and, at an accelerated rate, to 9.2 in 1931. In 1906 the industrial laborer had less than one horse power at his disposal; in 1931 he had 2.4. Before the war France had felt its disadvantage in the lack of adequate supplies of coal. It produced about 40 million tons a year, but had to import 20 million tons of coal and 4 million tons of coke to maintain its industries. Its difficulties during the war were intensified by the invasion which put mines yielding three-quarters of the supply under the control or within cannon range of the enemy. The French recovered their mines at the end of the war to find them wrecked and flooded, the machinery destroyed and the workers' dwellings damaged or destroyed. At the same time the return to France of Lorraine, with its great iron and steel industry, increased the demand for coal and particularly for metallurgical coke. The cession to France of the mines of the Saar,

in compensation for the damages done in the north, went but a little way to solve the problem, for their coal was not fit for coking. Germany was further required as part of the provisions for reparation to supply 7 million tons of coal or a corresponding quantity of coke every year for ten years, plus some additional amount to make up for the reduced output of French mines; the figures are merely of historical interest for the actual deliveries were far below the amounts contemplated. For the first few years after the war the French were in serious straits for lack of this prime essential of modern industry. The mines of the war zone were restored to operation sooner than had been thought possible, with modernized equipment which enhanced production; other mines which had been opened to take their place during the war continued to contribute to the supply; the national output soon reached prewar level (1924) and considerably exceeded it. The consumption of coal rose to nearly 2 tons per capita, placing France little below Germany in this index of industrialization, although still far below the leaders (U. S., 4.4; England and Belgium, 3.9). France was able to supply from its own mines about two-thirds of its needs, but had to rely upon imports to make up the remainder.

WATER POWER

The deficiency of coal brought prominently to attention a resource which the country had hitherto neglected, its latent water power. France is estimated to have available from this source 5 to 10 million horse power; in this respect it stands high among the countries of Europe, and not very far below the United States and Canada. The most important source is in the Alps, where the flow is large and is fairly regular because it is fed in summer from the snow, and where broad valleys provide the access for means of transportation. Before the war hydroelectric plants of a capacity about 1.5 million horse power had been installed, and additions raised the figure to about 2.7 in 1927. In the next ten years the hydroelectric output nearly doubled. Part of the energy thus gained was applied to the service of public utilities (electric light, railroads); part was used in manufacture. It was used particularly for the reduction of bauxite, the ore of aluminum, for the production of chemicals, for electric

furnaces making iron alloys, for power in the manufacture of paper, and so forth.

SIZE OF INDUSTRIAL UNIT

Still another evidence that France was following the path of industrialization was the growth in importance of the larger units of production. Figures below include both mining and industrial establishments, classified according to the number of employees.

<i>Employees</i>	<i>Percentage of Establishments</i>		<i>Percentage of Employees</i>	
	<i>1896</i>	<i>1931</i>	<i>1896</i>	<i>1931</i>
1 to 10	93	89	36	20
11 to 100	6	10	28	30
Over 100	1	1	36	50

Obviously the small establishment, although it was still everywhere to be found, was becoming always less important in its contribution to the national product. The large units were growing both in number and in size. Surveying the proportion of employees in establishments of different size, one might describe the three groups in 1901 as fairly nearly equal, but certainly would not think of so describing them in 1921. Industries providing clothing and food, the building and the wood-working trades lingered on a lower stage of organization; industries making iron and steel, and working on the metals, mining, the cotton and the glass industries were concentrating in large establishments.

SIZE OF FACTORY

Figures of the table above include both mining and manufacture. Below are given statistics of the distribution in establishments of different size of manufactures proper, "industries of transformation" as they are termed in French. To enable comparison with American statistics of manufacture, which in this more recent period omit small shops from the enumeration, establishments with less than six employees are excluded. The figures of the census of 1896, quoted in the last chapter, are recast so as to permit comparison on this basis; unfortunately that census gave only the number of establishments, not the number of employees, in works of different size.

Number of Employees	Percentage of Establishments			
	France		U. S.	
	1896	1931	1899	1929
6 to 20 employees . . .	73.3	67.3	66.3	49.7
21 to 50 employees . . .	16.2	18.9	19.2	23.2
51 to 100 employees . . .	5.5	7.0	6.9	11.6
101 to 500 employees . . .	4.5	5.9	6.7	13.0
Over 500 employees . . .	0.5	0.9	0.9	2.5

Of course in the development of industry the small factory has come first; in some branches it has proved to be the most economical form; and in most branches it has found a secure place for itself even when the large undertaking has overshadowed it. When the market is limited by the nature of the product (artists' materials, bricks), or the dispersion of the raw material (cheese, cider), when the product is not standardized but must express the personality of the customer or of the workman, the small unit is the most efficient. Henry Ford asserts, "As a general rule, a large plant is not economical," and buys a large proportion of the parts in his cars from others instead of making them in his own works. The apparent advantages, technical and economic, in large-scale operation are offset by difficulties in organization and management which require the highest grade of ability if they are to be overcome.

COMPARISON WITH UNITED STATES

So it is not surprising to find, both in France and in the United States, and at both dates given, that the small factory was the preponderant type. In France, in 1896, 9 factories out of 10 employed 50 workers or less, and the proportion had not changed greatly in 1931. The tendency in France evidently was toward an increase in the size of the plant, but movement in that direction was spread fairly broadly over the different classes, and was not at all revolutionary in its speed. In both countries the very small factory declined in relative importance, but much more sharply in the United States than in France. The small factory grew gradually, in its share of the total, in both countries. The contrast is most striking in the change in relative importance of the larger units, and particularly in the group including the largest factories. Just as the very small factories were declining

very much more slowly in France, so the very large factories were rising much less rapidly in relative importance.

SCIENTIFIC METHOD

With the growth in size of the French industrial unit went a more complex organization and increased efficiency; the big factories grew in importance just because they were, in general, more efficient.

Only in the large plant was it possible to realize that specialization of function which gave to the scientist and the trained manager the opportunity to make his peculiar contribution to the process of production. The movement toward a closer union of science and industry which appeared in all advanced countries at this time found the French prepared and sympathetic. They had furnished their full share of great scientists, and they now increased their number of industrial laboratories, public and private, chemical and physical. As noted in a previous chapter, they had, before other peoples, initiated the process of manufacture with interchangeable parts. Time studies, instruction cards, methods of rate setting, and other features of "scientific management" as the system was developed in the United States by Taylor and his successors, had long been known to the French. A commission of the American Manufacturers' Export Association which visited France in 1916 reported that: "The new war plants are well located and admirable of their kind; they elicited our profound admiration as models for the industries of France; nothing better can be found in the United States or elsewhere . . . certain of their shell plants are perfect to the minutest detail. In these plants not only are great quantities of a single article turned out, but the different processes are gone through in orderly sequence with a minimum of waste motion and a perfect automatic checking system that prevents slacking in any part of the operation." The munitions industry offered, of course, an ideal field for the application of the new methods of manufacture. The destruction of mines and factories in the war zone also gave a favorable opportunity for the renovation of equipment, and the more effective utilization of resources. When the damaged coal mine had been opened and pumped dry, it would be provided with new pneumatic and electric machinery

for drilling, cutting, and hoisting; around the mine would be grouped a central station for generating electricity, batteries of coke ovens supplying gas, a factory for making briquettes from the slack, and works supplying a great variety of chemicals.

OBSTACLES TO EFFICIENCY

Many industries showed in the postwar period an increased efficiency due to the superior organization of the large units. Illustrations will be given, however, of certain obstacles offered by French conditions to the application of the new ideas. The workman, we are told by those competent to judge, was still the craftsman, delighting in the individual touch and likely to become indifferent if he lost personal interest; mass production, by constant and automatic repetition, did not appeal to him. Nor did the customer take so kindly to standardized products. The breadth of the French market has been limited not only by the policy of protection, with its reaction on the export trade, but also by the insistence of the French themselves on variety in the products offered them. These two factors, labor and market, inevitably affect the organization of manufacture in any country. Still another set of factors, purely physical, affect the productivity of extractive industry, and react upon manufacture. Before the war (1911) the French miner averaged an annual product of 300 tons of coal, to be compared with 371 in England, 381 in Prussia, and 819 in the United States. In 1929, when the annual average in the United States had risen to 930, the French miner was producing less than a ton a day. Yet it would be quite improper to condemn either laborer or operator on the basis of these comparisons, without taking into account depth of mines, thickness and slope of seams, and a number of other physical factors which are often of decisive importance.

BUSINESS ORGANIZATION

The movement in France toward production on a larger scale was attended by the intensification of business activity which marks the industrialized state. In the twenty years from 1906 to 1926 the proportion of the people engaged in commercial undertakings grew rapidly; the personnel of insurance companies doubled, of banks tripled. Combinations in business took on a

new form. France had known nothing so highly developed as the German cartel or the American trust. The steel industry had had in its different branches a number of *comptours*, selling agencies, which sought to maintain a uniform price level by the distribution of orders among members, but which did not touch production; and France was represented in a number of international combinations. The movement toward the concentration of control proceeded during the war, stimulated by the government for military reasons, and marked in many cases by the absorption of ownership in larger undertakings. The period of reconstruction after the war offered an opportunity for a new layout of plants, and emphasized the need of combination to avoid ruinous competition at home, and to obtain a market for surplus products abroad. The joint stock form of organization increased greatly in importance, as was evidenced by the issue of large amounts of industrial securities on the stock exchange. The movement toward business concentration affected many of the most important French industries, metallurgical, mechanical, chemical, and so forth. In place of the selling agencies of the former period combinations were developed designed to exercise a more effective control of the home market, and France still continued to be represented in a number of important international cartels.

TEXTILES

Surveying the different branches of industry in the period under consideration, the most striking change was a shift in importance from textiles to metals. Comparing the same territory (excluding Alsace-Lorraine), textiles and clothing comprised 39% of workers in industry in the broader sense, including mining, in 1906, and only 28% in 1926, while the group including mining, metallurgy, and metal working rose from 18 to 27% of the total. The French textile industry lagged in the development of larger units, more efficient in mass production. In cotton the factories remained relatively small. Spinners were required to produce a great variety of yarns, of all sorts of staple, sometimes in small quantities. The weaving factories had short runs of goods, with frequent changes of design; the French weaver repeatedly refused to tend more than two looms, and actually

averaged less than one, if the statistics be credited. In silk weaving the tendency was actually toward a decline in the size of the factory. Before the war large factories had been built, including 500 looms or more, with dormitories for the women workers and with a bus service to take them to their homes in the country over week-ends. The war drew women back to work in the fields, and stimulated discontent with life under strict rule. After the war a new type of factory, including only 10 to 25 looms, was built out in the country, offering an 8-hour day to the women of the vicinity, and thus making the conditions of life far more agreeable; and more and more looms were established in separate houses, two or three in each, run by electric motors. Quite aside from this interesting example of reversion, the conditions in the textile and clothing industry as a whole seemed to bear out Siegfried's prophecy that it would find its future not in mass production but in supplying individualized products, which would appeal always to consumers of cultivated tastes, and which could be produced only in an atmosphere in which the personal touch was respected and encouraged.

IRON AND STEEL

In contrast with the textiles were the metal industries which had now risen to the first place in the national economy. Scattered establishments along the coast smelted iron ore imported from Spain and Africa with English coal, but most of the French works were grouped about the coal fields in the north, which became part of the war zone, in the center, where steel of the higher grade was produced for automobiles and tools, and in the east, the region of the Lorraine minette, the richest iron deposit in Europe. The Lorraine ore had a considerable proportion of phosphorus, which spoiled it for conversion by the method which Bessemer had discovered. The invention, however, by another Englishman, Thomas, of the basic method, in which the converter was lined with a material which would extract the phosphorus and which would render not only a good steel but also a good agricultural fertilizer, made the working of the Lorraine ores practicable. A great steel industry had grown up in the eastern region, supplying about half of the total French product, mainly in the primary forms of rails, bars, rods, and sheets.

France produced a surplus for export of these primary products, although she still imported some finished products such as machines and tools.

PROBLEMS OF STEEL INDUSTRY

The German invasion of 1914, sterilizing a large proportion of the coal and iron mines, and of the iron and steel works, put France during the war under a heavy strain. The treaty of peace reversed conditions, returning to France in the part of Lorraine which the Germans had taken in 1871 not only additional ore supplies but also a highly developed steel industry. The Germans had constructed here great basic steel works of a model character, combining the processes of smelting and conversion, and utilizing for power the blast furnace gas. The French now faced a double problem. On the one side they had to obtain from abroad enough metallurgical coke to feed the Lorraine furnaces. Even before the war they had been forced to import about half of the coke (or coking coal) consumed: the addition of German Lorraine, which had depended on coke from the Ruhr, increased their needs. They sought to solve this problem by requiring Germany to deliver coal and coke as part of the terms of reparation. The other problem was that of a market for the increased product due to the added capacity of the Lorraine works. The treaty of Versailles kept the German market open, at least for a time, but in competition with the steel makers of other countries, England, Belgium, etc., it appeared necessary to enter into the international agreements to which reference has been made above. A measure of the change in the metallurgical position of France is afforded by figures of production before and after the war. Of crude iron the output in 1910 was 4 million tons, in 1929 it was 10 million (10,450,000 tons, of which 9,670,000 were converted into steel).

STANDARDIZATION

A weakness in the French metallurgical industry, as it appeared to American observers, was the diversification of product, and failure to specialize in the production of standard types. This held true even of the largest works, such as that of Schneider at Le Creusot in central France. "The range of manufacture now

[1916] covered at Le Creusot and St. Chaumont would be startling to most American manufacturers. It includes almost all the processes from the ore to the highest grade of finished product of great variety. Such varied production demands the highest grade of supervision and makes it almost impossible to apply details of efficiency which would be used by the manufacturer who can concentrate his attention on one line." The lack of labor-saving devices and the reliance on manual labor even in the rolling mills were characterized by an American critic as "intolerable."

METAL WORKING

Following the metal industries through the later stages, much the same conditions are found as appear in this survey of the primary processes of metallurgy. There was a marked expansion measured with respect both to persons and product. Within the frontiers of prewar France there was a slight decline in total population, 1906-26, while the number employed in working on the common metals grew from 803,000 to 1,372,000, a gain of more than half. The production of industrial machinery grew 3 or 4 times in gold value, 1913-26. There was a distinct improvement in technical efficiency, particularly in some of the larger plants which now grew up. Yet along with this advance there persisted remnants of a more primitive and less efficient organization, and even the larger works struggled against difficulties which seem characteristic of French conditions.

MECHANIZATION

There is general testimony to the good qualities of the individual machinist, whose work was described as accurate and competent but somewhat slow, as was natural under a system in which piece wages were exceptional. Again, however, Americans noted a tendency to rely upon the individual activity of the worker rather than upon automatic or semi-automatic machinery. The reasons are significant. In the first place, as intimated above, the French workman was better than most others when he was engaged on his own job, was not so good as some when he was set at a task of repetition in which the machine was superior to the person. He found difficulties when given a machine tool not provided with

adjustments based on the metric system; the matter is mentioned but does not seem to have been very important. Most important appears the fact that most French manufacturers had not attained to production in such quantity of standardized products as would make the automatic machine really economical. There was no advantage in having it turn out parts with such rapidity that it would be left idle much of the time. An illustration is given of a highly specialized machine turning out 160 parts a day, which a French manufacturer refused when it was offered to him at \$7,000; he was glad to take it at \$3,200, stripped of some of its automatic mechanism and turning out only 40 parts a day, for he wanted only 200 parts a week.

AUTOMOBILES

Of different branches of mechanical industry only two developed to the point of using a considerable amount of special automatic machinery, those producing automobiles and electric motors and generators. The annual product of the French automobile industry came to exceed that of the silk industry, and nearly equaled that of crude iron and steel; producing over 200,000 cars a year France accounted for a third of the total European output, and was exceeded only by the United States and England. In the automobile industry there developed a marked concentration in large establishments. Citroen, Renault, and Peugeot accounted for three-quarters of the total product, turning out each 200 cars a day, more or less. Seven producers, under 10% of the total number, manufactured 89% of the total product. Along with them persisted many manufacturers in a small way, turning out 10 cars a day, more or less. A dealer in machinery, well acquainted with the industry, described conditions which present an interesting survival from the old-fashioned methods of manufacture. "A number of French cars are assembly jobs. Many of the parts of these cars are made by small foundries and machine shops scattered throughout the country. These shops are often 'family affairs'; that is, two or three brothers with perhaps a cousin or two, make up the working personnel. There is very little overhead expense, and by working 14 hours a day instead of 8, they turn out a large amount of work at a low production cost. Builders of assembled cars are often in this way able

to have their parts made cheaper than could be done in their own plant with modern machinery."

COMPARISON WITH UNITED STATES

The great manufacturers adopted American automatic machinery, developed the policy of progressive machining, standardized gauging, and chain assembly. Yet the results remained considerably below the standard attained in America. Citroen calculated that in the United States about 850,000 workers (including those employed in the supply of coal, iron and steel, textiles) produced 12,000 cars a day, while in France 210,000 workers were required for a daily output of 700 cars. He drew the conclusion from his estimate that 70 labor-hours would produce a car in the United States, while France required 300, or if the Citroen plants were excluded from the comparison, 500 labor-hours to a car. The contrast was due, of course, to the difference in the scale of operations in the two countries, and to the persistence in France of the many small manufacturers. And this difference, again, was due to the contrast in the market. In the United States, with 3 times the population of France, a workingman could buy a car with 60 days' wages, while in France he would have to pay 300 to 400, the income of a whole year.

Mass manufacture of automobiles did not attain in France either the economy or the quality of the American product. The best French engines remained without a superior in any country, and some of the engines produced "in series," to use the French term for progressive assembling, were perfectly good. Many, however, of those turned out in quantity production gave trouble during the first few months of their service, and had to be brought gradually to adjustment. The explanation given by the French author who states the fact is that here again France suffered from diversification, in this case of the raw material. French steel makers were called upon from so many sources, for so many different kinds of steel, that they could not attain, in their supply to a given manufacturer, such complete adherence to specifications and such absolute uniformity as was needed for perfect parts. A machine tool will behave differently when applied to different grades of metal, and will turn out parts of different dimensions if there is any variation in the raw material.

CONDITIONS OF LABOR

Under conditions as they have been described in this chapter France inevitably was restricted to a modest scale of living. An estimate applying to the year 1926 made the total national income about 200 milliard francs, which would give a per capita income of about \$200. The distribution of this income among classes was affected by the war, to the disadvantage of the lower middle class living on salaries and the income from small investments, in favor of the capitalist and the wage earner. An investigation in 1930 covering the common trades exercised in the towns throughout France showed that wages had risen faster than the cost of living since 1911; in rough gold equivalents the day's wage of a man had risen from less than \$1 to \$1.35, of a woman from \$0.50 to \$0.75. In the automobile factories unskilled laborers got about \$1.50 a day, skilled workers \$2 00 more or less; workers in the textile mills received in general less than \$1 a day.* Aside from the rise in wages conditions had improved. A law passed in 1913, just before the war, which limited the day's work of an adult man in a factory to 10 hours, was succeeded just after the war (1919) by a law establishing an 8-hour day (or a 48-hour week) as the normal period of working time; this was not applied to all branches of industry, but affected a large proportion of industrial laborers. Other measures of social reform contributed to the well-being of the working class. The labor movement, which before the war had been revolutionary in character, stressing class war and direct action, became much more moderate in tone, and inclined toward cooperation.

*ECONOMIC DEPRESSION; POLITICAL
INSTABILITY*

The promise of steady and normal development on a higher standard was denied by the reactions of the world crisis following 1929. French exports failed to find purchasers, and measured by an index which eliminated price variations had dropped in 1936

* In Paris, October, 1930, the wage of an apprentice in the trade making undergarments was \$2 to \$3 50 a week, in the dressmaking trade \$8 to \$10 a month. From this level employees worked up to 2 or 3 times the wage quoted, and the best hands got 4 times that. *Bulletin de la statistique générale de la France*, March, 1931, 20.219.

to little over half of what they had been in 1928. There was a similar but not so sharp decline in industrial production, affecting particularly the heavy industries; the production of iron and steel had fallen in 1932 to not much over half what it had been, production of metal goods to about two-thirds. The textile manufacture, now as in Britain burdened with surplus equipment, complained that it had lost half of its former market in woollens, a still larger proportion in cotton goods. Unemployment, to which in the past France had been singularly immune, became serious.

The French government was not qualified to deal effectively with problems of such magnitude. The Chamber of Deputies was divided not into two great parties but into a dozen different fractions. On the right of the speaker were the conservative groups, about a fifth or sixth of the total, defending the privileged classes, demanding a "strong" government, despising the parliamentary system and helping to make it inefficient. The center groups, composed of different shades of liberals and progressives, defenders of republican traditions, outnumbered the others when they could agree to act together and could get the support of others on their fringe. Next left came the radicals (Herriot, Daladier), one of the largest fractions in this period, appealing particularly to the lower middle class, and beyond them, at the left of the Chamber, groups representing the worker, socialists and communists, each divided again into fractions.

A ministry could exercise the power of the executive only when it commanded a majority in the Chamber by a union of fractions, and as coalitions were constructed and dissolved the ministry changed, sometimes holding office for merely a few days or weeks. Consistent policy, domestic or foreign, was impossible. Ugly scandals (Oustric, 1930; Stavisky, 1934) involved the administration of the time. "Blackmail of the streets," intimidation of the government by mobs, became serious in 1934, and threatened open conflict between fascists on the right and communists on the left. The "Croix de Feu" and other organizations of a fascist tendency sent out armed bands to break up the parades of their opponents, who retaliated in kind and who resorted to a general strike. Sedition spread even to the rural districts, where a leader preached "Up with the pitchforks" and nonpayment of taxes,

CURRENCY; PUBLIC FINANCE

The economic distress, resulting from the world crisis, presented to the government difficult problems, particularly in the fields of currency and public finance. The gold franc, at the standard set by Poincaré, fell out of step with foreign currencies which devalued their units. Exporters complained that they could not sell abroad at prices which covered their costs. Decline in business activity reduced the yield of taxes, and forced the government constantly to borrow to cover a deficit. From 1930 to 1939 the French budget was never balanced. A ministry under Laval, 1935, facing an empty treasury and a great deficit, tried a policy of deflation, a forced reduction in the level of wages and prices. He cut government salaries by 10%, along with interest paid on government bonds, and said he would regulate the price of everything, "from sardines to cement." Even he had to allow a rise in the prices of agricultural products, which were not covering the cost of cultivation, and had to borrow and spend to relieve unemployment.

The hardships of deflation were intensified in the minds of the people by a belief that the policy was dictated by and was to the advantage of a small group of capitalists. The Bank of France, as organized under Napoleon I, had given the choice of the board of directors to the 200 largest stockholders. While the government appointed the leading executive officials even these were subject in various ways to private influence, and the Bank, with all its immense power over credit and currency, was not strictly subject to public control. The "200 families," including great bankers, armament manufacturers and business leaders, of whom some controlled newspapers, were believed to use their influence in the Bank to shape its course to their own advantage, in determining the rate of interest and the discount policy.

ELECTION OF 1936; THE POPULAR FRONT

Socialists and communists, active rivals and usually bitter enemies, had joined forces in 1934, and in 1936 got the adherence of the radicals. Despite an appeal of Marshal Pétain, supporter of the conservatives, for "national reconciliation," the elections of 1936 gave control of the Chamber to the "Popular Front," a

combination of the parties of the left. An accompanying table shows the weakening of the moderate elements and the swing to the extremes, particularly toward the left.

<i>Chamber of Deputies, before and after 1936</i>	<i>Old</i>	<i>New</i>
Right	105	122
Center	164	116
Left		
Radicals	158	116
Socialist Union and other	66	36
Socialists	101	146
Communists (including dissidents)	21	82
	<u>615</u>	<u>618</u>

The victory of the Popular Front was won on a platform which denounced deflation, the "200 families" and the armament manufacturers supposed to be in league with them, and which demanded for labor a shorter working week and better assurance of the rights of trade unions.

DEVALUATION; STRIKES

In an interregnum of three weeks before a ministry under Blum could take control representing the new Chamber, security was threatened from two sides.

A "flight from the franc" began as soon as the results of the election, after the first ballot (Apr. 26), could be foreseen. Gold left the country or was secreted by individuals; estimates of the amounts in private hoards ran up to 30 or 40 thousand million francs. When the gold reserve of the Bank later had fallen to the "war chest minimum" set by the General Staff as a military necessity, the government was forced (Sept. 25) to devalue, fixing a rate roughly between 20 and 23 to the American dollar, and winning the support of the United States and Britain to maintain the new standard.

Combined with the threat to the currency faced by the new government was a threat to production. Before June 6, when Blum first faced the Chamber, over a million workers had gone on strike. Beginning in an airplane factory near Paris the strike spread throughout the machine industry of the region, and then outside, involving many plants engaged in the production of war

material, but leaving public utilities untouched. The strikes were of the stay-in kind. The factories were occupied, and sometimes the managing staff were held prisoners. Wild rumors were afloat of a fascist or communist plot to seize power. Many factories flew the red flag, but often with the tricolor alongside it; little damage was done to property, and not one life was lost in the movement.

A NEW DEAL IN FRANCE

The strikes, so far from being the result of a carefully prepared plot, appear to have been a spontaneous demonstration of workers against the conditions of employment. Collective contracts, legalized in 1919, declined in number and importance, particularly when unemployment provided a labor reserve which threatened the position of the worker. The discipline imposed on workers in a French factory appeared to outsiders to be old-fashioned and overstrict. Factory managers were inclined to be autocratic and arbitrary. Wages, as shown in a previous section, had risen after the first World War but met a check in the period of depression; the cost of living, which had fallen from 1930 to 1935, had begun to rise again.

The government of the Popular Front did not forcibly interfere to break up the stay-in strikes, although Blum said that he considered them illegal. It acted as mediator in the contest and passed a series of important laws, giving the country a New Deal. The bargaining power of labor was strengthened by an act which facilitated the conclusion of collective contracts, extended their scope and provided more effective means for enforcement. An act accepted the principle of the 40-hour week, but did not impose it immediately on industry, leaving its gradual application to the government. Another act, which went at once into effect, granted a fortnight's vacation with pay to all who had been in employment a year or more.

The Popular Front realized other points in its program by dissolving the fascist organizations which had made so much trouble, by providing for a gradual nationalization of the armament industry, and by a reform of the Bank of France which left the stockholders their dividends but practically nationalized the organization.

CONDITIONS, 1936-39

The three years remaining before the outbreak of war were an unhappy period marked by strikes and riots, and by a succession of ministries unable to master the situation. After a year in office Blum resigned, making place for a radical but less extreme ministry, which was granted the power that had been refused to him, of legislating by executive decree. The times could not wait on the entanglements and delay of the usual parliamentary process. The franc was cut loose from gold; in the course of two years it depreciated by over 50%, measured against the pound sterling. Decrees did something to check a rise in prices and wages, but could not solve the fundamental problem, an increase in production which would furnish means to arm the country against the threats that it faced abroad. The governments which succeeded that of Blum accepted the principle of the 40-hour week as an ideal, but under the conditions of the time saw themselves forced to modify and restrict its operation.

In large enterprises, employing over 100 operatives, from which alone statistical information is available, the working week had averaged about 45 hours. Some 87% of the operatives were working over 40 hours. The application of the new principle reduced this percentage in 1937 to 10%, in 1938 to 4%. The average of the working week had dropped to 39 hours or less. Only under pressure from the government and from employers, after the middle of 1938, was the trend reversed. An emergency decree of November, 1938, retained in form the 40-hour week, but in fact allowed overtime with such a slight increase in wages that it practically abandoned the principle. An attempt at a general strike in protest was a failure, and the statistics showed a steady lengthening of the working time, accompanied by an increase of output.

*COMPARISON WITH GERMANY IN
INDUSTRIAL PRODUCTION*

The danger of the situation is apparent when comparison is made with developments across the Rhine frontier. The official index of industrial production, taking for base the year before the great break, was as follows for 1932, at the depth of the de-

pression, for 1936, the year beginning Goering's four-year plan in Germany and accession of the Popular Front to power in France, and the years following to the first part of 1939 (the German figure provisional).

	1928	1932	1936	1937	1938	1939
France	100	78	85	89	83	95
Germany	100	59	107	117	125	(130)

An index of production is not an entirely reliable measure. Composed by assigning more or less arbitrary weights to various factors, it is framed in different ways in different countries, and even in the same country at different times. So in this case, comparing the course of industrial output in France and Germany, one has the choice of various measures, differing in detail. The matter is not important here; all the measures offered by statisticians agree in their general significance. German industry before the accession of Hitler (January, 1933) was much more depressed than the French. From the depth of its depression it rose rapidly to new heights. Recovery in France was slow and halting.

COMPARISON OF KEY MILITARY INDUSTRIES

Still more impressive is the contrast if comparison be made between special branches of industry particularly important in the process of rearmament. The classes illustrated cover different items in the two countries so the student must be content with a general impression, but should not fail to compare the index of a particular branch with the general index of the same country at the same date given above. That comparison gives for either country the trend toward (or away from!) effective preparation for war. The base of the index again is 1928 = 100; the German figure in parenthesis includes the product of Austria as well as of the old Reich.

	1932	1936	1937	1938
France				
Metallurgy	58	69	84	68
Metal working, general . . .	68	78	88	76
Automobiles, various	76	86	84	91
Germany				
Rolling-mill products	40	125	132	(146)
Machinery	41	103	124	148
Automobile trucks	23	162	188	201

The objections which may properly be made to indices such as are presented above do not apply to definite figures of product. This statistical comparison will close with figures for the output of a key industry in any armament program, that supplying iron and steel. Figures are in millions of metric tons.

	1928	1932	1936	1937	1938
Pig iron					
France . . .	9.9	5.5	6.2	7.9	6.0
Germany . . .	13.7	5.2	15.3	15.9	18.6
Crude steel					
France . . .	9.4	5.6	6.6	7.9	6.1
Germany . . .	16.4	7.1	18.7	19.3	22.9

INTERNATIONAL RELATIONS

Against this background of the political and economic conditions in France the reader should review the course of events in international affairs; summaries at the beginning of the chapters on Germany present the major facts and should be consulted at this point.

When occasion arose (1932) to amend the reparations settlement following the Hoover moratorium, the French government was in the hands of conservatives who demanded still their pound of flesh. Their refusal to compromise caused the fall of the Brüning government, the last which might have saved the Weimar republic, and paved the way for Hitler. After his accession (1933) the French for a time met the threat by a "strong" policy in their foreign relations, building up their alliances in central and eastern Europe as a military check. A little later, under Laval (1934), they tried a policy of appeasement. The critical test came in March, 1936, when German troops marched into the Rhineland, demilitarized by the treaty of Versailles. France's only answer was a gesture, an appeal to the League of Nations. At this time, when universal military service in Germany (also an infraction of the treaty) was only a year old, before the four-year plan of Goering had begun to take effect, there is no doubt that the French army was more than a match for the German, and vigorous action might have led to Hitler's fall. The French ministry of the time was weak, it was harassed by economic and

financial problems at home, and it faced a general election which was to show sharp social division.

Successive governments made liberal appropriations for national defense. In the five years 1935-39 these ran up as follows in milliards of francs: 11, 15, 19, 31, 56. Discount for the depreciation of the franc is a minor matter; the tragedy lay in the fact that France was not producing the goods on which these or even larger sums could be expended. While Italy and Germany were trying out their new equipment in Spain, France remained a passive spectator, afraid even to supply arms to the regular Spanish government. Ministers could merely plead with the people to lend their money, to pay their taxes, and to supply the goods needed to prepare the country for war.

QUESTIONS

What was the loss of France in men? in capital?

What was the course of inflation and recovery? On what basis did France return to the gold standard, and with what result?

Illustrate the losses suffered from devastation and from occupation of territory.

What was gained by the recovery of Alsace-Lorraine?

Illustrate decline in production, comparing 1913 and 1919.

What was the course of agricultural production after the first World War?

What were the causes of decline?

Explain the drift to the town.

What was the condition of agricultural labor?

What were the results of the lack of labor?

To what extent was modern agricultural machinery introduced? Why was it not employed more extensively?

Illustrate and explain changes in character of the peasant.

Was the peasant a profiteer?

Illustrate and explain increase in yield of agriculture.

What was the course of industrial production after the war?

What different facts testify to a process of industrialization?

What problem was presented by coal, and how was it met?

What was the development in water power?

What was the tendency in size of industrial establishments?

What was the tendency in size of factories? Why will small units always persist? Compare the tendency in the U. S. during the same period

What conditions favored the application of science to industry? Illustrate results.

What obstacles were offered by conditions in France?

Illustrate the development of the organization of business.

What was the course of the textile industry? What were characteristic features of the manufacture of cotton? of silk?

What was the course of the iron and steel industry? What particular problems did it offer? How was it criticized by American observers?

What was the course of the metal-working industries? Explain backwardness in the introduction of automatic machinery.

Illustrate the importance and the characteristics of the automobile manufacture.

Compare American manufacture, and explain the contrast in quantity, price, and quality.

What was the condition of the worker as regards wages and hours?

What was the result of the world crisis on French trade and industry?

In what respects was the government unprepared to meet the crisis?

What were the problems in the fields of currency and public finance?

What was the Popular Front of 1936; what was its platform?

What were the problems in currency and production faced by the new government?

What were the main features of its legislation?

Contrast the course of rearmament in France and in Germany.

Compare the course of events in international affairs.

READING

The book by William F. Ogburn and William Jaffé, *The Economic Development of Post-War France* (N. Y., 1929), gives a comprehensive survey of the subject; the second part of it, treating of different industries, affords the opportunity to follow their development into a recent period. For the period of the depression Alexander Werth, *The Destiny of France* (London, 1937), is excellent; the author was Paris correspondent of the *Manchester Guardian*. An article by David H. Popper, "The French War Economy," in *National Industrial Conference Board, Record*, July, 1940, includes a brief survey of prewar conditions.

Economic survey of prewar France. (Ogburn, chap. 1, pp. 3-19.)

Economic changes resulting from the war. (Ogburn, chaps. 1, 2, pp. 19-47.)

The currency. (Ogburn, chap. 4, pp. 48-68.)

Capital and investment. (Ogburn, chap. 4, pp. 69-92.)

Course of production after 1918. (Ogburn, chap. 5, pp. 93-120.)

Effects of inflation on trade. (Ogburn, chap. 6, pp. 121-155.)

Effects of inflation on production. (Ogburn, chap. 6; pp. 156-181.)

Industrialization. (Ogburn, chap. 8, pp. 182-215.)

Study of a particular industry. (Ogburn, Part II, contains 10 chapters on special industries and some general topics.)

Disorders of 1934. (Werth, chaps. 3, 4.)

Election of 1936, Blum. (Werth, chaps. 14, 15.)

Strikes, 1936. (Werth, chap. 16.)

Reform legislation. (Werth, chaps. 17, 20.)

CHAPTER XVII

Germany to 1871

MEDIEVAL GERMANY

Germany, as a united country, is a very recent creation. When it was established, in 1871, it looked back over many centuries of division to a period in the early Middle Ages when once before the people had been together in a single state. Its kings lost their power at home by wasting their resources abroad. When Otto I, in 962, added to his title of King of Germany that of Emperor of the Holy Roman Empire, he revived an idea of universal monarchy which the successors of Charlemagne had abandoned, and which neither he nor his successors could realize. By the thirteenth century their failure was evident. Distracted by their great ambitions they had kept an empty title and had lost their power as kings. The German people had split into hundreds of little states, nominally subject but practically independent.

At the beginning of the modern period the danger of this condition had not yet become apparent. The lack of an effective political control gave free play to economic forces which made the German cities of the time the wealthiest and most progressive of any in northern Europe. The extraordinary development in business and finance has been described in an earlier chapter. In mining and in the reduction of metals the Germans held a position of unquestioned leadership. In manufacture their invention of printing and of the watch ("Nuremberg egg" as it was first called) testified to a technical competence which they showed in the arts both of peace and of war.

CLASS WAR

"Without a superior power which could check the selfish interests of different classes and combine and regulate them for the

common good, a class war developed: city against country, merchant against knight, peasant against lord.

The town would send out its armed bands to destroy the tools of the village craftsman, and the country would seek as far as it was able to refuse trade with the townsman and give preference to foreign peddlers.

The knights had owed their place in medieval society to their ability as warriors. Society no longer needed them in that capacity. Unable to adapt themselves to the altered conditions, depressed by the decline in their revenues from land, ruined sometimes by extravagance in their effort to keep pace with the expenditure of wealthy citizens, they sought to live off the society which they could no longer serve. Their castles became nests of highway robbers, from which they emerged to plunder caravans on the roads, and to hold the merchants for ransom. A trading company sometimes fixed in its articles of association the amount to be paid for the ransom of a member. Some cities in northern Germany, helped by the open country, broke the power of the knights, but in the south this undeclared war lasted long, and wrecked the trade which had been so prosperous.

From 1550 on complaints were frequent of the impoverishment of the towns, abandonment of the roads, ruin of the merchants. The towns had further to face a dangerous rival in the territorial princes, who sought to establish complete control within their frontiers, and could attain it only as they forced the towns into subjection. They imposed levies and contributions, but did not offer security in return; they raised the tolls instead of lowering them; their policy was actually to weaken the towns, economically as well as politically.

DECLINE OF RURAL POPULATION

Meanwhile the mass of the population, living by agriculture in the country districts, were losing ground. While serfdom was fading away in England it was creeping back in Germany. The great movements making for freedom, the founding of towns and the colonization of the east, had ceased. The growth of population resulted in a division of land holdings which passed the economic limit. The price of agricultural products fell in the fifteenth century, and the small cultivators, unable to adapt

themselves to the changed conditions, became the prey of the village usurer. A rural proletariat developed, forced to dependence to maintain life. A class of vagabonds, lordless men and men who had lords but could get no land on which to live, grew in size until it became a plague.

It was once thought that this process of degradation of the rural population was much furthered by the reception of Roman law in place of the old German codes. The theory seemed plausible but has been abandoned. The German laws themselves were turning against the small landholder. The laws were merely a reflection of the general conditions, weakening his position. The territorial princes, who later were to defend him as a taxpayer and possible recruit for the army, were too busy consolidating their power to interfere with landlords who used the opportunity to depress their subject population.

PEASANTS' WAR; RETURN OF SERVITUDE

The process of depression was attended by revolts of the country people, demanding remission of their debts, expulsion of usurers, freedom from their lords, reduction of tithes and taxes. They were caught in the net of a developing organization, which left little place for the small independent cultivator, and struggled in vain. The Peasants' War of 1525, starting in the southwest and spreading through a considerable part of Germany, attended by the burning of castles and murder of their inmates, then by a merciless repression, was of no help. Even where it succeeded in gaining for a time the abolition of the new exactions, as in the northwest, the relief was only temporary, and men formerly free sank again into dependence.

Coming at the time of the Reformation, the social revolt got no support from Luther and other religious leaders. In the period of religious wars which followed the fate of the peasant was sealed. His substance eaten up by quartered troops, or his land and house wasted, his stock and grain taken by the enemy, he was fortunate to survive at all. At best he would need help, and must accept whatever terms the lord imposed upon him. In favored districts peasants maintained personal freedom and hereditary right to the land which they worked. In general they declined to some degree of servitude. Conditions varied greatly

but the downward movement was general, in the newly settled regions of eastern Germany as well as in other parts.

EFFECTS OF WARS OF RELIGION

The home of Protestantism became its battlefield. Conflicts of religions, inviting the interference of foreign powers, culminated in the Thirty Years War (1618-1648). The political fragments of which Germany was composed fought to exhaustion. Many towns emerged from the war with half of their houses in ruins; many regions lost more than half of their population. One German author estimates that Germany was set back two centuries in its development; another summarizes the calamity by saying that it wrecked the whole German middle class. Another asserts that not even the French Revolution made such a breach with the past, that the Germans forgot what they had learned, even to the trade secrets of the guilds, forgot their own literature and were amazed later when they rediscovered it to find it was so rich.

Scarcely a shadow of national political unity persisted. Hapsburg emperors were interested only in their own dynasty, ruling over peoples largely non-German. Some provinces purely German remained outside the empire; many foreign states were represented in it. Attempts to infuse some life in the imperial legislature, administration and judiciary had failed.

POLITICAL CONDITIONS

About 1800, when England was already well advanced in the Industrial Revolution leading to the present organization, when France had passed through the political revolution by which it hoped to modernize itself, Germany was still in a condition approaching the medieval. The country was splintered into little independent states of which more than 300 divided among themselves the German people. Next to Bismarck, Napoleon may be said to have contributed most to the unification of Germany; as a result of military victories culminating in the battle of Jena (1806) he swept away the power of most of the German princelets, and re-formed the country into about 40 states.

Even after 1806 there was still no Germany. The Germans

lacked a common currency, common taxes, even a common law. The roads of one little state did not connect with those of its neighbors; the rivers were cut into sections by political frontiers. Some of the states were made up of disconnected pieces; the duchy of Saxe-Coburg-Gotha was composed of ten, Brunswick of eight. Each state had its own customs tariff, and some had internal tariffs and transit duties in addition; Prussia, the largest of the states, had over 60 distinct tariffs. To reach the center of the country from the outside the merchant had to cross from a dozen to a score of these tariff boundaries, and had to struggle against other obstacles, such as the variety of currency and of laws. There were still in Germany, much later (1844), 56 different laws regulating bills of exchange.

OCCUPATIONS

This political fragmentation, essentially medieval, entailed necessarily an organization of production resembling much more that of the Middle Ages than that of the present day. Nearly three-quarters of the population of Prussia were rural, restricted to extractive industry, and if the people of the little towns who practiced agriculture be added, the proportion of the population occupied in agriculture may have been 80% or above. Prussia counted over 1,000 places with town rights, but it would be a great mistake to confuse these with modern cities. Only 17 of them had a population over 10,000—a smaller number than that which could show an excess over 100,000 in 1900. Most of these places had less than 3,000 inhabitants, and a very large proportion had less even than 1,000.

PRIMITIVE ORGANIZATION

Applying Adam Smith's principle that "the division of labor is limited by the extent of the market," we find, as would be expected, an extraordinarily primitive system of production, with little territorial specialization, and with the unit of production reduced to the simplest terms, often the individual worker. An American reader will find a better parallel in the colonial conditions of the eighteenth century than he will find in northwestern Europe. The country dwellers, making up most of the popula-

tion, supplied most of their own needs, not only of food but of clothing and housing. The peasant farmer was in his own person or as represented by a member of the family a butcher, baker, mason, carpenter, cabinetmaker, spinner, weaver, fuller, dyer, tailor, soapmaker, brewer. He would have to go to the town artisan for his shoes, his harness, his metal work, and such specialized products as the casks of the cooper. The town artisan was still the simple craftsman, working in a little shop, perhaps with the help of journeymen and apprentices, but still with methods and implements which had been sanctified by centuries of tradition. In the country and in the town Germany retained not only the characteristic organization of the Middle Ages but also two of their most characteristic institutions, serfdom and the gild.

SERFDOM

In a country made up of so many parts, subject to a great variety of historical influences, a brief statement cannot apply equally to Germany as a whole. Conditions varied. It may be said of Germany in general, however, that it still maintained in law and in fact the institution of serfdom, by which the people of one class were kept in hereditary dependence, lacking freedom of movement, freedom to marry, freedom in the choice of occupation. In western Germany the proportion of the servile class was not so large, and the conditions of servitude were not so burdensome as in the districts east of the Elbe, where the land was owned in estates of considerable size, organized like the medieval manor. Here the lords (Junkers) not only owned the land but relied upon the forced services of their servile tenants for its cultivation, and exercised the right of jurisdiction over them.

CONDITIONS OF SERFS

Illustrating by conditions where they were worst (Pomerania, Kurmark, Upper Silesia), we find in nineteenth-century Germany the characteristic evils from which more advanced countries had escaped centuries before. Since there was no freedom of contract but labor was forced, the dependents gave their services unwillingly and felt no interest in the result; if a storm threatened in haying, they would not hurry and were pleased rather than other-

wise if it came. Opposition and friction were constant in the efforts of the lord to get work done, and held him to a routine of cultivation in which the problem of administration was simplified. The gain to the lord, measured by results, was small; the loss to the serf, measured by time, was large. In Pomerania, where there was no limit by custom on the labor which the lord could exact, the common people had sometimes to plow their own fields by moonlight with exhausted horses, after the day's work for the lord. In Silesia fishing services were not uncommon. In October or November, often when there was a film of ice on the ponds, the lord would drive his dependents into them, to catch the carp with nets or with their bare hands; when a man was frozen stiff he would be taken out to a fire, his mouth pried open, and warm beer and pepper poured down it. In the Polish districts of Upper Silesia the dependents were treated like slaves, much worse than the live stock. Some were forced to give all their time to the lord for 6, 8, or 10 years together; they were given barely enough food to keep them alive (porridge, peas, occasionally meat from an animal dead of disease), and pay insufficient to buy their clothing. Threatened with prison, they could truthfully say that they would rather spend 2 years there than 10 working for the lord. Most of the lower class in this region went without stockings the year around; in summer the men wore shirt and trousers, the women a jacket and skirt without even a shirt.

EFFECTS

In districts where these conditions prevailed, the character of the people was degraded. They became careless, lazy, thievish. They grew cunning in the evasion of work, and had to be driven to it with the whip. They had no respect for property, and abused the farm animals as they did the buildings which were turned over to their use. Prussia prided itself on a general system of elementary education, established well in advance of neighboring countries, but in some of these manorial districts there were whole villages where few could read or write. The village school might be held by a tailor or weaver who would let his wife do the teaching, and the appointment was often in the hands of the lord, who would put in a superannuated servant or some one who had done him a discreditable service.

EMANCIPATION

Conditions like these obviously barred progress. Modern society has developed its economic efficiency by stimulating its members to make the most of themselves and of their property. It has given them, to this end, personal freedom so that everyone can choose the work for which he believes himself best fitted to succeed, and has substituted contract for custom or status, improving the opportunity for the individual and at the same time enhancing his responsibility. A society permeated with the spirit of serfdom was doomed to stagnation, and could not hold its place in competition with more progressive societies. In Prussia, as later in Russia, military events forced the rulers to decisive action. After the overwhelming defeat at Jena (1806), the Prussian kings initiated a series of reforms, extending over the whole first half of the century, by which the institutions of the country districts were gradually transformed from those of the manorial system to those of the modern order. Personal freedom was, at the start, established for all members of society. No one could be held to labor except by his consent. As regards the distribution of the property right in land the legislation was less generous. Where land was given to the common people the increase in their zeal was noteworthy; they got double the product from a given area. But only the upper class of workers, those who had previously held enough land to support a full plow team, were at first given a property right in the land which they had been working, and then in only part of it. The lords resented the rise of a new class of proprietors beside them, by which "they had always to be walking on other people's land," which "spoiled the pleasure of living in the country," and "made their estates a hell for them." These lords of the Junker class who furnished the best officers of the Prussian army, had too much influence to be disregarded, and managed as a result and sometimes in spite of laws to obtain for themselves most of the agricultural land in the regions east of the Elbe. The mass of the people became agricultural laborers, making their living by working for the landlord. In western and in southern Germany where dependence had assumed a milder form, and where manors were less important, emancipation resulted in the establishment of a large class of peasant proprietors.

AGRICULTURE

As might be expected from the persistence of serfdom, the field arrangements and systems were in large part still medieval. The open-field system with its intermixture of scattered strips was general. A holding large enough only to support a good-sized family might be composed of 200 or 300 separate fragments; in the region of the Rhine the meadow owned by an individual might be the size of a bedspread. Coupled with the open-field system was the old three-field system—winter grain, summer grain, fallow—with its characteristic weaknesses. The lack of fodder for stock restricted the number of farm animals which could be kept for draft and for food, and reduced the amount of manure available. After constant cropping with cereals for centuries the land returned a yield only a third or a fourth of that which it gave later under improved systems. A yield of 9 or 10 bushels an acre was considered very respectable. The clumsy and ineffective plows of the time stirred the soil only to the depth of some four inches. Cattle, kept through the winter on an insufficient supply of straw for fodder, were often so weak in the spring that they could not stand, much less walk; they were dragged by the tail upon a sledge (hence the name *Schwanzvieh* given to them), and were hauled out to pasture. Prussian kings and other leaders had tried to stimulate the introduction of such new crops as the potato and clover, and Thaer, whose name stands out prominently in the history of German agriculture, spread by his writings acquaintance with more advanced methods. The resistance of ignorance and tradition to these efforts at improvement can be measured by the fact that one writer sought to defend the three-field system by reference to the Holy Trinity.

MANUFACTURE

In manufacture as in agriculture the organization about 1800 was still essentially medieval. An artisan was prohibited by law from plying his trade in the country districts. He must enter the trade as an apprentice in one of the town gilds, must submit to such conditions as the gild imposed to attain to the independent position of a master craftsman, and was then still subject to the rules of the gild. Some of the worst abuses of the gild system had been remedied, but its narrowness and pettiness remained still the

order of the day. The law of the time left, however, some opportunity for a more advanced organization to develop. Mining, in which the Germans had been recognized leaders for centuries, was carried on in the mountains, and little iron furnaces were established in or near the forests, smelting the ore with charcoal. Under the leadership of merchant employers an immense amount of spinning and weaving was done in the cottages of the countryside. Much of this was practiced as a by-industry, occupying the spare time of agricultural workers, but there were regions in which whole villages supported themselves by textile work, producing with the simplest implements wares which were sold by the merchants in the town markets, and which even were exported in considerable quantities to foreign countries. Factories had begun to appear, but they were still exceptional; their development will be described later.

STANDARD OF LIFE

A country which was not endowed with a fertile soil or favorable climate, in which four-fifths of the people sought their living in agriculture by methods which were ineffective and wasteful, could not support its population on a high standard of life. A German statistician estimated the average income of a Prussian subject in 1802 at 27 thaler, say \$20. This is only half the income ascribed to the English by Gregory King more than a century earlier. No sensible person would believe that we may conclude, offhand, that the standard of life in Germany in 1800 was only half as high as in England before 1700. The important thing is the conviction forced upon us, not merely by shaky estimates but also by all the other evidence, that in either case the standard was so far below that of the present day as to strain our comprehension. Pauperism was infrequent in Germany, but poverty was almost universal. A modern writer (Sombart) thinks that, aside from the landed nobility, not 1,000 persons in all Germany in 1800 had incomes exceeding 10,000 marks, say \$2,500. By chance we have for England at the same time (1801) tax statistics showing 1,020 persons returning incomes over £5,000 (say \$25,000 with an average income in the class of nearly \$50,000); but of course these figures include members of the landed aristocracy along with representatives of the new order. To indicate the simplicity of life

even of the upper classes German writers remind us of Goethe's bedroom at Weimar, dimensioned about 8 by 11 feet, and provided with the simplest furniture. Another measure is furnished by statistics of consumption in Prussia about 1800, including all classes, the relatively well-to-do along with the common people. Estimates would give to each inhabitant per year an average of $1\frac{1}{2}$ yard woolen cloth, $\frac{3}{4}$ yard cotton, 4 yards linen, $1\frac{1}{2}$ pounds tobacco, 1 to $1\frac{1}{2}$ pounds sugar, $\frac{2}{3}$ pound coffee, and so forth.

A suitable introduction to the course of development from this point is provided by estimates of the increase in consumption. The average inhabitant of Prussia spent on 16 commodities grouped together, to compose an index, sums as follows:

<i>Year</i>	<i>Thaler</i>	<i>Dollars</i>
1806	11 5	8.20
1831	21.2	15.20
1842	22 1	15.80
1849	26.7	19.10

THE ZOLLVEREIN

The most momentous change in this period was the establishment of a customs union, the Zollverein, which wiped away a number of the tariff frontiers, and first made possible the extension of trade and the development of a more advanced organization. Prussia, the largest German state, had reformed its tariffs in 1818, and in 1834 induced other states to join with it in a union which comprised about two-thirds of the area and population of Germany. Internal tariffs were abolished, and the common tariff on the external frontier was remarkably liberal for a European state of the time. Lines of wagons gathered on the roads at the old internal boundaries, we are told, and at the stroke of midnight crossed them amid cheers. Some interests suffered, as must often be the case when protection is removed. Small undertakings were unable to compete with the larger units of production, which could show their efficiency in the broader market afforded. The industrial development, which will later be described, could not have taken place except as this new field for it was provided. The introduction of the railroad, at almost the same time, multiplied the efficiency of the reform, and hastened the process of modernization. The union was extended to

include all the German states except Austria, and liberal commercial treaties were made with other European states. The effect on internal trade can be measured by comparing grain prices in the same year in different provinces of Prussia; improved trade facilities reduced the spread between high and low prices in 1855 to one-quarter of what it had been in 1817. Along with the extension of the commercial area went a process of unification of commercial institutions. The states of the customs union were pledged to cooperate in the establishment of a common standard of weights and measures, and a common currency, which were finally attained just before and after 1870. A common law regulating bills of exchange was adopted in the different states about 1850, and a common law regulating other commercial interests somewhat later; a common postal service under public control was established for most of the states in 1868.

DEVELOPMENT OF TRADE

The most important effect of all these reforms was undoubtedly in the field of internal trade. We have no statistical measure of its increase, but can trace its effects in all parts of the organization. Less important in this period, but still of significance, was the development of foreign commerce. Figures below give in rough equivalents the value of the commerce of the Zollverein at different periods.

Small as these figures seem, measured against those about 1900, they gave Germany an important position in the commerce of the time, leading all countries except France and England, and not far below France. The growth in the value of foreign trade, measured with respect to population, is particularly significant.

<i>Year</i>	<i>Million Dollars</i>		<i>Dollars per Head of Population</i>	
	<i>Imports</i>	<i>Exports</i>	<i>Imports</i>	<i>Exports</i>
1834	76	103	3.20	4.40
1854	192	239	5.90	7.40
1860	261	333	7.80	9.90

IMPORTS AND EXPORTS

The nature of the foreign trade of the Zollverein can be illustrated by another table, giving the percentage of total value contributed by wares of the more important classes, in 1864.

	<i>Imports</i>	<i>Exports</i>
Articles of consumption	27	23
Raw materials	38	15
Partly manufactured and materials for manufacture	23	9
Manufactures	9	52

Among articles for consumption Germany necessarily depended on the outer world for tropical and semitropical products, such as coffee, tea, spices; sugar and tobacco also took an important place in the list of imports, although the country supplied at home a part of the amount consumed. The major item of export under this head was cereals and flour; the country was still so largely agricultural that it looked to the farming class to provide part of its purchasing power abroad even though this involved for some classes a stinting of the food ration at home. Its natural resources were not so rich as to provide large exports of raw materials; the surplus of forest products and raw wool was not sufficient to pay for such textile fibers as cotton and silk, which could not be produced at home. The trade, import and export, in industrial products is the most interesting and significant part of the table. In products of a developed factory system, such as yarn, or of advanced metallurgical technique, such as crude iron, the Germans were still distinctly inferior, and made heavy purchases abroad, particularly in England. The manufactures which furnished the major part of their exports were in general the product of hand work, in which low wages were still the determining factor in winning a market: cloth of cotton, linen, woolen, and silk woven on hand looms, metal articles cast or wrought, pottery, a great range of minor specialties. In the account, which will come later, of the rise of modern forms of industrial undertakings the reader must realize that in the background was the great mass of industrial producers, working at home or in small shops and working still with implements of a bygone age.

HANDICRAFTS

Most numerous were the artisans in the handicrafts, settled in the little towns and supplying the simple needs of the townsfolk and of the farming population of the vicinity. Down even into

the nineteenth century they remained the most important part of the industrial organization. The regularity of the old order is beautifully illustrated by figures which show the proportion of representatives of the common trades to total population in Prussia at dates a generation apart.

	1795-1803	1831
There was one shoemaker to	206	197
There was one tailor to	242	241
There was one smith to	361	429
There was one baker to	628	614
There was one butcher to	839	848

and so forth, with fluctuations increasing according to the specialization of the trade.

INDUSTRIAL ORGANIZATION: BADEN

Serving a broader market were the cottage workers engaged in the cloth industry, and, finally, the factory workers. The relative importance of these different classes can be illustrated from the statistics of one of the German states, Baden, as late as 1861. Baden was industrially less developed than some other German states, yet the statistics ascribed (1851) 37% of the families to manufacture and mining. This surprisingly high proportion, almost as large as that of Germany after 1900, would doubtless be reduced if modern census methods of counting were employed, yet would still be high. Only when we analyze the figures in detail can we realize that a country showing a large proportion of the workers engaged in industry can still be far removed from our idea of an industrial country. Of the total of about 160,000 persons, 92,000 were petty craftsmen of the sort indicated in the table above; the two crafts of the shoemaker and the tailor made up over a quarter of the number. Some 19,000 were home workers, weaving on hand looms in their own cottages. The statistics show some 50,000 workers employed in "factories and industrial establishments producing mainly for the wholesale trade," but the reader who scans the list finds it distended by such items as the following: 1 shawl factory with 8 workers, 1 carpet factory with 8 workers, 2 copper works with 4 workers, 649 sawmills with 682 workers, 1,922 grist mills with 2,378 workers, 859 brew-

eries with 1,502 workers, and so forth and so forth. A rough analysis, excluding establishments employing on the average less than 20 workers, would reduce their number from nearly 7,000 to about 600, and the number of workers employed to less than 30,000. There would remain some good-sized establishments. The two beet-sugar refineries with over 2,000 workers may have counted out-workers in the fields, but some of the spinning mills were undoubtedly like modern factories, and were of considerable size. The reader will perhaps realize best the distance by which the industry of that period was removed from the present organization from the fact that (excluding mining and saw and grist mills) only 167 steam engines were employed in manufacture, with a total horse power of 2,434, an average under 15, considerably less than that of a small automobile.

ENCOURAGEMENT OF INDUSTRY

Even before 1800 some individual undertakings of considerable size had been established. Mines required a somewhat elaborate equipment, particularly when they were combined with metal works. A mine in Upper Silesia is described as having (at about 1800) six water wheels furnishing power not only for the operation of the mine but also for the blast furnace, a battery of hammers and a rolling and slitting mill. The various governments were eager to extend industrial activity, both to occupy their people and to provide wares which could either be exported themselves or could take the place of imports. In either event, according to mercantilist doctrine, the industry saved money by bringing it from abroad or by keeping it at home. So lavish encouragement was given, in Germany as in France, to the founding of industries. Such contrast as appeared between the two countries lay in the greater thrift and more effective administration of the German governments, and their relative freedom from the personal influences which corrupted the French system. In neither country did these protected establishments attain a really vigorous growth or a position of national importance. Forced growths, likewise, with feeble vitality, were the factories established during the Napoleonic wars, when the continental blockade shut out foreign manufactures and encouraged home industry.

COTTON

Most of the cotton-spinning factories which had grown up in this period were killed by English competition after 1815. Here and there a manufacturer would survive, if he had ability and energy, if he would work hard and could get cheap labor. Strengthened by experience he would extend his operations, and get the advantage, very considerable in cotton spinning, of production on a larger scale. In this way, little by little, an independent industry grew up in Germany. It did not reach the level of English efficiency. Germany still imported large quantities of English yarn, as indeed it continued to do in the later history. But favored by proximity to customers and by some tariff protection, German spinners could at least hold their own in some parts of the field.

WOOL

In the spinning of woollen yarn the superiority of the large establishment did not show itself so early. German cloth-makers spun their own yarn at home; they would have one or two machines, each with 40 spindles, operated by members of the family and workers in the household. In Prussia in 1840 the average number of spindles to an establishment was still little over 100. In the twenty years following, the number of establishments declined to less than one-third, while the number of spindles increased so much that each establishment averaged nearly 600. The description of the woollen industry in Aix la Chapelle by an English traveler (Banfield, in 1848) gives a picture of the earlier conditions; 23 mills were engaged in spinning wool; they employed 1,048 hands but had an average of only 92 spindles apiece, and only 2 of the 23 had steam engines, with an aggregate of 12 horse power. Only 24 of the 488 establishments engaged in different branches of the woollen industry in that region employed steam, with an aggregate of 385 horse power. Not long afterward the average of spindles to a mill had increased to about 1,000 and doubtless the use of steam had been greatly extended.

POWER

For the operation of any but the simplest machinery the need of some external power was felt, and was supplied usually by

water, sometimes by animals driven around an axle which they made to revolve, a horse gin or winding engine. The interruption to water power during the frosts of winter and the droughts of summer prevented continuity of operation, and induced manufacturers to introduce steam in spite of the added expense of the engine and its fuel. Steam horse power in Prussian industry grew from 7,500 in 1837 to nearly 62,000 in 1855, and over 600,000 in 1875. The reader may be reminded that in all France in 1850 the horse power of stationary engines amounted to but 67,000; and Prussia formed only about half of the German states.

IRON

The iron industry in the early part of the century was still in the stage of the little charcoal furnace, and Germany had to import a large amount of its crude iron from England. Even in 1847 only 32 out of 247 Prussian blast furnaces used coke instead of charcoal. Between that date and 1870 progress was rapid. The furnaces were doubled in height and increased in section, the hot blast was introduced, coke displaced charcoal. The annual product per worker grew from 26 tons in 1860 to 43 in 1865 and to nearly 70 in 1870. Germany passed Belgium and France in iron production.

KRUPP

The firm of Krupp had already attained a position of leadership, not only in Germany but in the whole world. The founder, Friedrich, died in 1826, leaving to the son, Alfred, a shop employing four workmen. The Krupp speciality was cast crucible steel, a metal of fine quality superior for many purposes to any other, but requiring painstaking care in its manufacture. The growth of the business can be measured by the number of employees: in 1835 (when the first steam engine was introduced in the works), 67; in 1846, 122; in 1851, 704; in 1861, 2,000; in 1873, 16,000. To anyone conversant with military history there is an obvious connection between these stages of growth and the wars in which European powers were engaged; Krupp steel was unexcelled for small arms and artillery. In this growth of the Krupp business two elements at least are noteworthy. One is the contribution of German labor. To make a product such as Krupp exhibited at

the Paris Exposition of 1867, a block of homogeneous cast steel weighing 80,000 pounds, required almost perfect discipline and organization. The steel must be melted in separate crucibles in 240 different furnaces, and must be poured continuously into the mould at the right temperature; an eye witness described the work as done with astonishing precision by a brigade of 800 men, drilled to perform every movement so accurately that the whole group worked as one. Another feature was the elaborate equipment with which the works were endowed, including not only the complete plant for casting and working the metal, but reaching out also into the primary processes, including iron mining and smelting. This process of integration was not original with Krupp or confined to his works. Some years earlier Banfield described the engine-building shop of Haniel at Ruhrort on the Rhine: "The order, quiet, and business-like arrangements were quite English; but it was not very English to hear that nearly every pound of iron used had been raised at their own mines, smelted, rolled, and finished at some of their own works."

CONDITIONS 1850-70

The rapid industrial development of Germany after 1870, so rapid that it almost strains the understanding, would be wholly unintelligible if it had not been preceded by a period of preparation in which sound foundations were laid for the advance. This preparatory period may roughly be described as covering the years 1850-70. Before 1850 the German people were in the period of industrial apprenticeship. They had to go to their western neighbors, particularly England and Belgium, for a knowledge of processes, for acquaintance with machines, and for an understanding of the organization of machine processes in the factory. They borrowed capital as well as ideas. Many industrial undertakings were set up only to fail. They were learning their lessons in a school of bitter experience. About the middle of the century the fruits of this period of trial began to appear. Sifted out by a process of natural selection, leaders gifted with the rare combination of qualities needed by the captain of industry founded establishments which were destined to reach the first class in efficiency and extent. Many of these men came from the ranks; starting without means or influence they rose to the

top by sheer ability. Richard Hartmann came to Chemnitz in the '30's as a journeyman machinist with less than \$2 in his pocket; in twenty years he was employing over 2,000 workmen. Another machine works, that of Borsig, employed 50 workmen in 1837 and 1,600 in 1866; it was accounted the largest locomotive factory in the world. It is significant that in this machine age individual Germans were succeeding not only in manufacture by machinery but also in the manufacture of machinery itself. German writers can give an extended list of leaders who in the decades before 1870 founded industrial firms which became celebrated in later history. Some industrial establishments had already taken on the form of the joint stock company, although the spread in manufacture of this agent of capitalist expansion was reserved for the period after 1870, when new regulations facilitated its creation. Already, however, Germany had left the Middle Ages so far behind that it was subject to the shocks of the new order; it celebrated its capitalist adolescence by a sharp commercial crisis in 1857. The banks, which in the early part of the century had followed the conservative lines of business marked out by tradition, were now ready to lend their aid in the promotion of new enterprises, and shared in the active speculation which led to the reaction.

LABOR

The contribution of German labor to the successful establishment of modern forms of manufacture in the country can best be discussed later when the reasons for the rapid development after 1870 are considered. An extract from an English writer who visited the Haniel foundry in the Ruhr about 1850 will illustrate the advantages which the German employer enjoyed. Asked if there was any danger of a strike such as had recently threatened among Lancashire moulders, "We were told no interruption on the score of wages was anticipated, although only leading men in the works, chiefly puddlers and roll-masters, were paid as high as is common in England. The habits of the people are averse to such attempts—the laws enact severe penalties; but the chief ground was of course to be sought in the excess of supply over the demand for labour. A country only rising from a very bad organization of labour, by which a disproportionate

number of the inhabitants are tied to agriculture, finds it easy to recruit the manufacturer's demand where the people, being all well-trained at school, are versatile and easily taught." The strength of the manufacturer's position implied, of course, corresponding weakness on the side of the factory worker. All the evils and abuses which showed themselves in the early English factories were reproduced in Germany: the exploitation of children and women, the long hours, the unwholesome surroundings. They did not last so long, however, and they were not so severe. The period of the factory was later in Germany than in England by some 50 years. The unhappy experience of the English was not lost on the Germans. Not only had private and public opinion changed in the interval, but also governments had learned how to administer more effectively the regulations designed to protect the worker.

COTTAGE SPINNERS

Real as were the hardships endured by labor in the early factories, they appear almost negligible in comparison with the sufferings of hand workers in the textile trades. The common fabric used by the Germans for underclothes and for some of the outer garments was linen; statistics of consumption, quoted on an earlier page, indicate its importance. The preparation of yarn from the flax and of cloth from the yarn was effected with the simplest implements, and was a common household occupation. Many of the laboring class, provided perhaps with a small plot of land but with neither land nor agricultural wages sufficient to support a family, made both ends meet by selling yarn spun at home. In some districts whole villages were devoted to this occupation. The individual spinner could earn only about 2 to 2½ groschen (say 5 or 6 cents) a day, but the price of food was low and wants were simple. The opening of the continent to the cotton yarn and cloth of the English factories in 1815, at the close of the Napoleonic wars, wrote the death sentence of the old linen industry, which could not hope to compete with the constantly cheapening product of machinery. In desperation the spinners increased their output at the expense of its quality, and lost their export market. Earnings declined until, about 1840, a whole family, man, wife, and children, working day and

night at the spinning wheel, could not earn over 5 cents a day. The unequal contest lasted for more than a generation. Its close is pictured in figures full of meaning; the state of Prussia in 1855 still counted 75,000 hand spinners of linen, in 1861 less than 15,000.

HAND LOOM WEAVERS

Cotton spinning was never of importance as a cottage industry in Germany, and in working wool the contest was between shops or factories of different size and did not lead to such widespread popular distress. In weaving, the hand loom remained still, and even after 1870, the common instrument of production, and cloth was produced for merchant employers in the home of the worker. The flying shuttle had come into general use after 1820, and a good loom could be bought for about \$11. The fortunes of the hand loom weavers varied according to the branch of the textile trade in which they worked. They fared worst in linen, in which they were subject to the competition of other textiles as well as of the machine product. As early as the '40's the linen weavers of Silesia, where the industry had been established by Prussian kings in the preceding century, were reduced to destitution. A weaver had to work 16 hours to earn 2½ to 3 groschen (say 6 to 8 cents). Hundreds were swept away by famine and typhus, and there were violent outbreaks against the merchant employers. The people lived on porridge and potatoes, the children went naked, and the adults were barefoot even in winter. It is significant of the lingering death of cottage industry that much later (1891) some 50,000 persons were still engaged in Silesia in textile home work, still working 15 or 16 hours a day, and earning little over \$1.50 a week. Of 100 textile laborers included in the statistics 5 were under 15 years of age, 7 were over 70; how many of the very young and old were working in scattered cottages and were not reported it is impossible to say.

DEVELOPMENT OF AGRICULTURE: ENCLOSURE

From this survey of industrial development we return to a consideration of the branch of production which still engaged most of the people, agriculture. The greatest step in the modernization

of that occupation, the emancipation of the serfs, has already been noted. The process of emancipation was slow, and still more slow was the untangling of the intermixed property rights involved in the open-field system. A regulation of 1821 gave Prussian land-holders the opportunity to escape from the old network by a process which included the exchange of strips and the laying out of new roads to serve the blocks of land thus consolidated. The reader must not underrate the difficulty of this process. Carried out by the superior power of the landlord, as in England, it could be forced through rapidly, but if the rights of all concerned were to be carefully weighed, and the engineering questions set by roads and water supply were seriously studied, the problem became very complex. In the twentieth century five or six years were allowed to complete the process in a village. Even in 1930 a considerable part of the arable area of Germany still lay in unenclosed open fields. The process of consolidation had gone furthest east of the Elbe, where the prevalence of large estates facilitated it. In the western provinces of Prussia more than two-fifths of the area still awaited consolidation and enclosure, and in southern Germany the proportion of unenclosed arable was probably as high or higher.

IMPROVEMENT OF SYSTEMS

In recent times the gain by enclosure in Germany has been estimated at a reduction of the cost of cultivation by one-fourth, and an increase in production of one-third. In an earlier period the gain may have been even greater. Even without enclosure improvement was possible where roads through the fields permitted the different strips to be treated individually, or where the cultivators could agree on a change of method. The old three-field system was subject to many changes in the second quarter of the century. Clover, potatoes, sugar beets, and legumes took the place of fallow. In western Germany the rotation of crops was introduced, and in the eastern parts at least a larger proportion of leaf crops was cultivated. All these changes made it possible to keep a considerably larger number of stock, and production on the arable was enhanced by the more abundant manure. Between 1800 and 1870 the yield per acre of rye, barley, and oats is

estimated to have doubled, that of wheat to have increased by a half. The productive area grew by the reduction of fallow, and taking into account both factors, the increase of area and the increased yield per unit of area, it is estimated that the product of German agriculture doubled and possibly tripled in the course of the nineteenth century.

CRISIS AFTER 1870

The more recent period, beginning in 1870, which for the manufactures to be described in the next chapter marked an extraordinary development, was for agriculture a period of stress and strain. The world crisis of 1873 initiated a fall in the price of agricultural products which was particularly marked in western Europe, where the cheap grain and meat of new countries were now marketed in profusion. We shall have to note social and political effects of the crisis: a great increase of the debt on farm land, and an attempt by a protective tariff on food-stuffs to relieve the pressure at the expense of the consumer. The economic effect was a stimulus to efficiency. If the reader will refer to the table comparing crop yields in different countries after 1900 (p. 295), he will find Germany near the head of the countries listed.

FERTILIZERS

There was an extraordinary increase in the amount of artificial fertilizer applied to the land. Comparing figures for 1890 and for 1913, the increase in the amount of potash salts was 14-fold, superphosphates 4-fold, phosphates from steel slag over 5-fold, Chile nitrates over 2-fold, sulphate of ammonia nearly 7-fold. The source of some of these fertilizers deserves a word of comment. Germany had at Stassfurt the richest supply of potash salts of any country of the world; it was one of the few items in which it stood very high in the list of natural resources. It won a valuable phosphate as a by-product of its steel industry. The combined phosphorus, which spoiled the quality of the iron of the Lorraine ores when they were reduced by the primitive Bessemer process, could be extracted by the basic process invented by the Englishman Thomas, and the slag when pulverized formed

an effective fertilizer. The German chemical industry was already developing processes by which nitrates (as in sulphate of ammonia) could be synthesized without need of dependence on such natural deposits as the guano beds of Chile.

AGRICULTURAL MACHINERY

The use of agricultural machinery grew in corresponding measure. The number of farms (German *Betriebe*) did not change greatly. The total number, including the very small holdings, was something over 5 million, the number with an area of 12.5 acres or more was not much over 1 million (in 1882, 1,233,106; in 1895, 1,305,632; in 1907, 1,351,296). The number of farms reporting agricultural machinery of the kind indicated was as follows at different dates (figures in thousands, rounded):

	1882	1895	1907
Steam threshing machines . .	76	259	489
Other threshing machines . .	298	597	947
Sowing machines	64	169	290
Mowing machines	20	35	301
Steam plows	1	2	3
Cream separators	—	88	337

The Germans, favored neither in soil nor in climate, made up their deficiencies by hard work and by that application of scientific method which is characteristic of the people. Liebig, the leader in agricultural chemistry in the nineteenth century, has had worthy successors in the field of theory; the government has disseminated the teachings of experts and the people have adopted them. The cultivation of the sugar beet is an example of a highly developed art encouraged by the cooperation of German chemists. In 1840 the manufacturer got about 51½% of raw sugar from the beets crushed, in 1860 8%, about 1900 13%, in 1910 over 16%.

SIZE OF FARMS

In the distribution of ownership of the land there had been relatively slight change since 1800. The table below gives the holdings of different size in 1907, with reference to farm operation, not to ownership; but investigation has proved that the

divergence of ownership statistics from these figures is not considerable.

<i>Size</i>	<i>Number (Rounded)</i>	<i>Percentage of Agricultural Area</i>
Under 5 acres	3,000,000	5
5 to 12 5 acres	1,000,000	10
12.5 to 50 acres	1,000,000	33
50 to 250 acres	250,000	29
Over 250 acres	25,000	22

COMPARISON WITH FRANCE

Conditions in Germany, as represented by these statistics, resemble the French rather than the English agrarian organization. The resemblance to the French is actually less than the figures would suggest. Too close a comparison of the distribution of land in holdings of different size would be misleading; the products and methods of the two countries were so different that figures of size do not represent the same facts. In both countries there was a numerous peasant class, cultivating small farms with their own labor. The characteristic peasant of France, however, worked on a smaller scale than his German neighbor; east of the Rhine a larger part of the area was held in peasant farms of considerable size, of 100 acres and over. Of the very small holdings France had a larger proportion which represented either independent agriculturists, or persons on their way to becoming such. Even in Germany, particularly in the southwestern part, a farm of five acres, on which grapes, fruit, tobacco, or hops were grown, would support an independent cultivator, but in Germany a considerable proportion of these small parcels of land was held by people who had some other occupation, such as inn-keeper, smith, etc., and who practiced agriculture only as a by-industry. The contrast is most marked at the other end of the scale, in the large holdings. Not only did Germany have a much greater part of the whole area in really large estates of 250 acres and above, but also in Germany these estates were concentrated locally, in the region east of the Elbe, and were not scattered about among the medium and small holdings. France had no class to show like the German Junkers, successors to the manorial lords who had kept the land when their serfs were freed after 1800.

LARGE ESTATES

These large landlords found themselves in a particularly difficult position during the agricultural crisis after 1870. Devoted largely to the production of cereals they suffered from the fall of prices in the world market, while their costs were increasing. They had, so far as they were able, kept the common people from getting land at emancipation, thinking that they would be forced to labor, as before, on the lord's estate. They had thus, however, deprived the people of any permanent interest in the region where they lived. Emigration to America and movement westward in Germany to districts where manufactures were developing drained the eastern districts of their labor supply, raised agricultural wages, and compelled the landlords even to import labor from neighboring Poland. Debts incurred in a period of stringency became more burdensome as prices continued to fall, and mounted up to an ominous total. With great political influence, by reason of their social and military position and their local concentration, the Junkers became leaders of an agrarian party which obtained protective duties on cereals and other foodstuffs, first established in 1879 and raised considerably in later years.

AGRARIAN PROTECTION

By 1900 Germany had become an industrial state in the sense that home-grown supplies of food no longer sufficed to support the population, and the country must look to the export of manufactures to buy the needed supplies from abroad. The food tax weighed heavily on the industrial laborer, reducing his real wages by the increase in the price of the bread and meat which he consumed. The large landlords were those who received most of the benefit; the holders of medium and small farms, engaged in raising a variety of products, were not deeply interested. The government defended its course by pointing to the military situation of the country, asserting that it must be as far as possible self-sufficient, and must rely upon the agricultural class to furnish the best material for the army. Further, it could assert that the flood of imports was temporary and would cease as population grew in the new countries to consume the food at home.

QUESTIONS

Explain how Germany lost political unity in the Middle Ages.

Causes and effects of class wars about 1500.

Explain the decline of the rural population.

What was the date of the Reformation? of the Thirty Years War? How did they affect the peasant?

What was the political constitution of Germany before and after 1806?

What important elements of unity did the Germans lack?

What was the nature of the economic organization, as evidenced by occupations and urban groups?

Compare conditions with those in the American colonies.

What liberties did the serf lack? Where was serfdom most prevalent?

Illustrate the condition of the serfs east of the Elbe.

What effects of serfdom could be traced?

What were the reasons and occasion of emancipation?

What were the terms of emancipation?

What was the yield of agriculture? Why was it so low?

What was the industrial organization? (Distinguish handicraft, merchant employer, factory.)

Illustrate the standard of life, as indicated by different measures. What evidence is there of improvement, 1806-49?

Sketch the establishment and growth of the Zollverein. What changes in transportation and in law accompanied it?

What was the course of trade following the establishment of the Zollverein? What was the nature of imports and exports? Contrast imports and exports of industrial products.

(In contrast with the figures in the text, the student may be interested to determine roughly from the U. S. Census of Occupations how many people are now served by a tailor, a baker, etc.)

Illustrate the industrial organization of a German state about 1860, distinguishing different classes of workers.

Explain the establishment and survival of factories.

Illustrate the development with reference to cotton, wool, application of steam power, iron, and steel.

What were significant features in the development of the Krupp steel works?

Contrast industrial periods before and after 1850.

What advantage did an Englishman find in the employment of German labor?

Illustrate the decline and destitution of cottage workers in spinning, in weaving.

Sketch the progress and results of enclosure (consolidation).

Illustrate the improvement in cropping systems, and the results

What were the cause and results of the agricultural crisis after 1870?

Illustrate the increase and the source of artificial fertilizers applied.

Illustrate the increase in the use of agricultural machinery.

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Compare the distribution of land holdings with that of France.

Why did the Junkers suffer particularly from the agricultural crisis after 1870?

What did they do to improve their position?

READING

The political background is covered by James Bryce, *The Holy Roman Empire* (revised, N. Y., 1904). Social and economic conditions at the close of the Middle Ages are described in Ehrenberg (reference in chap. V above) and in J. Janssen, *History of the German People* (London, 1896 ff.). Clapham and W. H. Dawson, *Evolution of Modern Germany* (revised, N. Y., 1918), offer the best reading on the nineteenth century.

Condition of the rural population about 1500. (Janssen, vol. 1, book 3, chap. 1.)

Condition of the artisans. (Janssen, vol. 2, book 3, chap. 2.)

Reasons for contrast of English and German agrarian history. (W. J. Ashley, in *Economic Journal*, June, 1913, 23:165-181.)

Agriculture to 1848. (Clapham, chap. 2, pp. 29-52.)

Agriculture since 1848. (Clapham, chap. 9, pp. 195-231; Dawson, chap. 12, pp. 229-253.)

Condition of agricultural labor. (Dawson, chap. 14, pp. 262-287.)

Industry to 1848. (Clapham, chap. 4, pp. 82-103.)

Communications and commerce to 1848. (Clapham, chap. 5, pp. 104-120.)

Early railroad and telegraph. (Clapham, chap. 7, pp. 140-157.)

CHAPTER XVIII

German Manufacture, 1871-1914

RESULTS OF THE WAR, 1870-71

The year 1871 marks an abrupt turning point in German history, both political and economic. In that year the German people at last established for themselves a single state, comprising most of their number, and added to it the provinces of Alsace and Lorraine, rich in agricultural, mineral, and industrial resources. They exacted from the French, moreover, at the close of the Franco-Prussian war, an indemnity of 5 milliard francs, roughly \$1,000 million, which was rendered with surprising promptness. The first fruits of the victory, however, turned bitter to those who sought to enjoy them. An unexampled period of reckless speculation, in which the number of stock companies was tripled by the activity of promoters, led up to the crisis of 1873, and to a period of depression lasting through the decade.

INDUSTRIAL DEVELOPMENT

If the dreams of the speculators were not immediately realized, yet the progress of the country in the succeeding generation surpassed anything that sober judges at home or abroad would have imagined possible. Inside the framework of the new state a new economic organization developed with a rapidity which was matched only in a country with the virgin resources of the United States. ✓Germany was in 1860 still a country predominantly agricultural; about 60% of the people got their living from the soil. After that date the number employed in agriculture remained almost the same, while every year additional hundreds of thousands of a rapidly growing population joined the ranks of those engaged in industry and trade. Before the first World War Germany had become the greatest industrial country of the world, measured by the absolute number engaged.) The advance in the more complex and advanced forms of organization

is pictured also in the rapid growth of urban centers. In 1840 there were only 2 cities counting over 100,000 inhabitants; in 1910 there were 48. The percentage of the people living in cities of that size was in 1871 under 5; in 1910 it was over 21. In the decade before 1900 Berlin was growing more rapidly than Chicago.

COAL AND IRON

The progress of Germany in this period can be measured by the speed with which it developed its resources of coal and iron, two products particularly characteristic of industrial advancement. Figures in the accompanying table are given in round millions of tons, with another figure which indicates roughly how many-fold the product of each country in the table increased in the course of the period.

	<i>Resources</i>	<i>Germany</i>	<i>England</i>	<i>France</i>
Coal				
1875		28	99	11
1913		273	287	40
Increase		× 10	× 3	× 4
Pig iron and steel				
1875		2	6	1
1913		14	8	2
Increase		× 7	× 1	× 2
Steel ingots and castings				
1875		0.2	0.7	0.2
1913		14	7	2
Increase		× 70	× 10	× 10

HORSE POWER

Another index of industrial progress is afforded by the figures of steam horse power applied to industry in the state of Prussia. In 1837 the country had made a bare beginning, with 400 little engines producing altogether only 7,000 horse power. In 1855 the figure had risen to 62,000 horse power; in Germany as a whole the amount of industrial horse power must already have exceeded the French figures. The most rapid development, however, was reserved for the succeeding period. In Prussia alone, in 1879, the horse power approached 1 million, in 1901

was nearly 4 million, in 1911 it exceeded 6 million. Assuming that 1 horse power provides the energy which would be supplied by 12 to 24 men, the figures suggest the extent to which human endeavor had been supplemented in this period of mechanization.

SIZE OF ENTERPRISE

Still another and in some respects a still more significant index of industrial growth is afforded by the statistics which group the industrial population (both mining and manufacture) according to the size of the enterprise. For present purposes it seems necessary to distinguish only 3 classes, groups of 10 or less constituting what may be termed a small shop, 11 to 50 making a small factory, groups over 50 making a large factory. It is convenient to include in the table the postwar figures, and reference will be made later to the growth of the very large enterprises in which more than 1,000 persons were engaged. Figures give the percentages of the whole number of industrial workers engaged in enterprises of different size at the time of each census.

	1882	1895	1907	1925
Up to 10 persons	61	47	36	29
11 to 50 persons	13	17	18	16
Over 50 persons	26	36	46	55

HANDICRAFT

The first line of the table comprises petty industry, craftsmen, and workers for a merchant employer. The absolute number of those engaged in industry on this small scale remained about the same; the proportion to the whole diminished greatly. The workers who remained without the help afforded by machinery and power, and who could get little advantage from the division of labor, had to content themselves with a bare living. When Lavollée wrote (1884) the earnings of the craftsman, working in summer from 5 in the morning to 7 at night, in winter from 6 to 8 or 9, were estimated to be about \$4 or \$5 a week; in bad times they sank to \$2 or \$3. The family rarely ate meat, and had to content itself with the simplest lodging. Craftsmen established in the little towns, serving the country people, fared better

than those who endeavored to maintain themselves in the cities. Earnings barely kept pace with the rise in the cost of living. In the city of Hanover, just before the first World War, the average income of the craftsman was about \$375 for the year. Bakers and butchers were the aristocracy of the class, earning up to \$600; tailors and shoemakers earned but \$300 a year, or even less.

MERCHANT EMPLOYERS

The home workers producing for a merchant employer were still worse off. Reference was made in the previous chapter to the condition of the hand loom weavers in Silesia about 1890. Nowhere else was destitution so extreme, but other members of the class, weaving goods of cotton, wool, or silk in a hopeless competition with machine-made products, were engaged in a losing fight. In this later period merchant employers found their outworkers not so much in the cottages of the countryside as in the crowded districts of the cities, and gave out work to be done particularly in the needle trades: the making of clothes and underclothes, embroidery, lace, gloves, and so forth. The census of 1907 showed still over 400,000 of these outworkers in industry. The employers found such advantage in the low rates of pay accepted by the workers, in the small amount of capital required and in the consequent ability to stop operations without serious loss when the market was bad, that they could continue this form of business even in the modern industrial environment. Apparently a minimum wage law, extremely difficult to administer, would be the only means to rescue this submerged group.

FACTORIES AFTER 1870

The major part of Germany's industrial population was still of the kinds described above, when the Empire was founded in 1871. Factories were relatively rare, and the factory organization was in general inefficient. An Englishman said in 1871 that the working hours in German factories were from 5:30 A.M. to 8:30 P.M. for 6 days in the week, yet the product was no more than would be turned out in England in a 60-hour week. Professor Reuleaux, an expert judge who represented Germany at the Philadelphia Centennial in 1876, reported, "In the in-

dustrial field we have received a defeat equal to two Sedans." Krupp guns were the only products to be proud of. The exhibits of German industry were in general *schlecht und billig*, "cheap and nasty." An Englishman, writing in 1878, said, "Of course, as a manufacturing nation, Germany is at present very far behind us, being immeasurably poorer, more heavily burdened in ways that tell on the efficiency of labor, and far from thoroughly organized." An American, visiting Reuleaux in 1887, thought that his verdict on the German industry of 1876 still held true, and this was probably the general opinion.

From such beginnings German factory industry, in the course of a generation, swept upward to a commanding position in the European world. The reasons for this sudden display of vigor, for this rapid transition from a simple and inefficient organization to a highly complex and very efficient organization, form one of the most interesting problems in economic history.

SOMBART'S ANALYSIS

The subject may be introduced by a rough summary of the analysis of German characteristics explaining the people's specific talent for capitalism, as presented by Werner Sombart. He finds in the Germans a lack of the aesthetic qualifications of the Romance peoples, but in compensation a strong ethical disposition, a sense of duty. The Germans further (still following Sombart) have a talent for cooperation, a readiness to sink the individual personality to become a specialized part of a group. German history, embracing so much military drill, has disciplined the people beyond others, and so fitted them to act each his particular part in "big business." The mixture of races, with an infusion of Jews, is an element which Sombart always stresses. The lack of a modern state before 1871 developed certain useful characteristics; it inculcated modesty in foreign trade relations, it enforced patience and painstaking care. Germany was very far from being spoiled by success. On the other hand the imposing success of the Empire after 1871 engendered other more positive qualities, while the exclusive tendency of the Hohenzollern monarchy did not tempt into the service of government men who had the qualifications to become great captains of industry.

DISCIPLINE

Without attempting to discuss in detail all of Sombart's suggestions, it will be profitable to review some factors of incontestable importance in German industrial success. "There is truth in the saying that Prussia became great by hunger," said August Bebel, one of the leaders in the history of German socialism. The simple life had been imposed for many generations on a people who managed still to hold fast to ideals of home and family which kept them from being degraded. The rapid increase of population in the very period of success maintained an unremitting pressure; pressure forced progress. Germany in 1850 was almost as densely populated as was France in 1900, but between those dates there was an increase of over 20 millions, for which a place had to be found somewhere. The people were bred up in submission. The schools, which all must attend, were subject to strict discipline. Their directors exercised a qualified right of arrest and imprisonment to subdue unruly pupils. From school youths passed to the army where for two or three years they were again drilled in the elements of order, obedience, care of the person and belongings. If Germany lacked in this period an established class of factory laborers like the English, in whom factory work was a tradition inbred for generations, there were compensations. It had at least raw material admirably qualified for initiation, and the reader may be reminded that Henry Ford prefers such labor to individuals set in ways which may not suit the factory organization.

EDUCATION

"Ten years' residence and study in Germany has led me to the belief that this Empire's greatest capital is its intelligence." So wrote a commercial agent of the United States at Eibenstock, in 1903. Are the Germans naturally more intelligent than other peoples? Doubtless an "intelligence test" could be framed to prove the case, but a skeptic could be pardoned for doubting its significance. Yet it does seem true that the Germans had succeeded better than any other people in discovering intelligence where it did exist, in developing it so far as training could do that, certainly in inculcating a respect for it and giving it a

higher place in the direction of social activities. It has often been said that it was the primary school teacher who won for the Prussians the victories at Königgrätz and Sedan. Illiterates were almost unknown in northern Germany; "they are as dead as gypsies, three-field agriculture, tilt carts, and wolves." Education did not turn the mass of the people into intellectual prodigies. According to the general opinion German workmen were not original or inventive. An Englishman who made inquiries in this matter in many parts of Germany got always the same reply, that no suggestions for improvement of methods were ever made by the workmen. But if the people in the course of their training lost some of their initiative they were well prepared to follow the initiative of others. The results of English education, according to the Bishop of London, were that it made the English school-boy not only to dislike learning but to despise it. The German people did not all become learned, but all came, at least, to respect learning in others. One of the ambitions of the small boy, it is said, was to become a professor! The people liked to learn, and they liked to apply their learning. Any foreigner who traveled in the country could testify to the eagerness of individuals to display any acquaintance, even of the most modest dimensions, with a foreign language, when an Englishman or an American would stick resolutely to his own. The statement ascribed to a German engineer that a common workman might be seen figuring his wages by application of calculus would illustrate this point, while it would suggest that he could reach the desired end more quickly by some simpler method.

HIGHER EDUCATION

The reader must distinguish German education at two levels, the universal education of the common people touched upon above, and the higher education in technical schools and universities for the production of leaders. In both fields Germany had shown the way to other countries. Prussia combined, as Kuno Francke said, the democratic ideal of education for all with the aristocratic ideal of careful training and selection of the best. It was characteristic that the University of Berlin was founded at a time (1809-10) when the country was using every resource to escape from under the power of Napoleon. A rough measure of

activity at the higher level is provided by statistics of books published in Germany (including parts of Austria and Switzerland) and in other countries just before the first World War, during, and after it. (Figures are given in thousands.)

	1913	1916	1920
Germany	35	22	32
France	11	5	6
England	12	9	11
United States	9	10	8

The quantitative comparison is itself impressive, but is made more so if quality be taken into account. A large part of the output in England and in the United States consisted of fiction, while Germany had a much higher proportion of serious works, educational in character, and many more books designed for the young. The ten most popular authors with the workmen at Krupp's included Schiller, Lessing, and Goethe, and translations of Dickens and Scott; translations from the classics were in steady demand.

Further, this is to be noted. The fruits of education are of slow growth, cumulative through generations. Respect for learning cannot be effectively taught in the school alone. It must be taught at home, by parents who themselves were educated in the home as well as in the school. Standards which impose themselves upon a people without the need of being preached have an authority beyond any conscious exhortation, but are slow to establish themselves. So it is significant that even in 1801 nearly 4,000 books were published in Germany, roughly 1 to 8,000 population compared with 1 to 2,000 in 1911. And it is significant that even in 1840 an Englishman could report as follows on the Zollverein: "The German people is remarkable for temperance, thrift, industry, and intelligence, and enjoys a system of universal education. Excellent polytechnic schools diffuse technical instruction throughout the entire country."

MORAL QUALITIES

This last quotation puts in the first place moral virtues: "temperance, thrift, industry." Is it true, as Sombart thought, that the Germans had more of an ethical inclination, a stronger sense

of duty than other peoples? A discussion of the general question would lead far afield, and would probably lead to no definite conclusion. But this, at least, is certain, that they showed certain virtues, notably those specified above, in measure beyond other peoples. And it would be idle to deny the immense economic import of those virtues. Treitschke thought that the domestic institutions of the people were their sole salvation in enabling them to recover from the fearful ravages of the Thirty Years War. Shadwell, a competent English judge, found in those same domestic institutions of the home and family the salvation of the people in the throes of industrialization, when the sudden development of the factory system and of the great city subjected society to strains comparable to those resulting from war itself. "The habits of the people!" he exclaims; in them he found the real reason why the German working classes, with lower wages, longer hours, and higher cost of living than the English, could yet maintain a superior standard of physique.

In closing this survey of the contributions which the common people have made to the industrial progress of Germany I shall raise a question, without implying agreement with the judgments expressed, and certainly without attempting an answer. Siegfried described prewar France as "a happy country." An American traveler (Collier, in 1910) observed: "Germany is getting to be a very tired-looking nation. One hears almost as little laughter in Germany as in England." Does industrialization pay?

ORGANIZATION

No matter how good the common labor of any country may be, it will count for little in the complex organization of modern industry if it is not competently led. There is a fair parallel in military matters. An army in which the common soldiers, as individuals, are of first-rate quality, but which is poorly directed, will be defeated by another in which the rank and file may be of indifferent stuff, but which is so well staffed that every campaign is wisely planned, and every battle is fought under conditions selected by good strategists. The Germans attained their position in modern industry as much or more by the merits of their leaders as by the good qualities of their laborers.

SOURCE OF LEADERS

An English author made the surprising statement that the class of self-made men was practically unknown in German industry. It is true that in this later period of development the leaders came commonly from the middle class, descended, perhaps, like the Krupps, from ancestors who had fought their way up in the earlier part of the century. With the highly capitalistic tendencies of the most modern time it has been difficult for an upstart to break into the group controlling big business. German social divisions, down to the first World War, were sharper than in France or England. While an education was given to everyone, two parallel systems of education were provided, one for the common people, another at a higher level for the middle and upper classes. It was difficult and it was unusual for members of the laboring class to manage a transfer to the higher level. With or without an education some rose from the bottom to the top. The head of the firm of Schuckert & Co., electrical manufacturers of Nuremberg, was in 1873 working at the bench in a small shop. In 1882 he had 40 workmen under him, in 1900 he had over 8,000. Other examples could be cited, but it may be conceded that they were relatively less common after 1870 than before that date, less common in Germany than in the United States. Still, the question whether the constitution of German industry in this period was democratic or aristocratic is interesting rather than important. From the purely economic point of view the matter of decisive importance was that Germany had a supply of leaders sufficient in quantity and quality to build up an industrial organization which in some ways was the most efficient of any in the world.

APPLICATION OF SCIENCE

One merit the German manufacturers had, incontestably, in measure beyond that of any other people—a recognition of the importance of science in modern industry and a determination to make the greatest use of its application. In no other country was the importance of the scientific expert recognized so early; in no other country was the proportion of experts in industry so high. The advanced stage of educational efficiency in the

German scientific schools and the inclination of the people to study contributed greatly to this result. While the proportion of the staff to the rank and file in industry doubled, the supply of technical experts increased still more rapidly. The competition for places forced down their salaries to an extent which encouraged manufacturers to make the fullest use of their services, though on the other hand it suggested the appearance of a "white-collared proletariat." Inquiries made shortly after 1900 showed that most of the trained technical graduates in municipal service and in the mechanical and electrical industries received salaries of \$500 a year or less, that less than a quarter had salaries exceeding \$700. To an extent hard to realize in America the dignity of the position, the German *Stand* (status in society), was accepted as compensation for the low income; and in some lines of work great prizes were reserved for those who proved their ability.

EXPERTS

The career of such experts may be illustrated by reference to the chemical industry, the branch of manufacture in which their contributions were recognized by all the world. An English author (Dawson, in 1914) counted 1 university-trained chemist to 40 work people, and found a ratio of science to labor which could be matched nowhere else; a German author (Elster, in 1929) reckoned 1 expert to 5 workers. The exact statistics are unimportant; the figures are quoted merely as illustrations. University graduates were received in German color works on a 5-year contract, binding themselves not to enter the employ of other works for a period of 2 years after departure or dismissal, but drawing salary meanwhile. The salary was modest, about \$500 at the start, but the chemists were members of a select group, a sort of club or faculty, with a keen consciousness of its dignity and responsibility, with regular meetings for professional discussions and with an active social life. The chemists determined in large part their own activities in research; after service in the works some were sent off to travel and study in some particular field, to return then with their contributions. A discovery made by a research man would be patented by the firm, but a share of the profits would be given the discoverer if it proved to be a com-

mercial success, and as a result some of the chemists enjoyed large incomes.

OPTICAL INSTRUMENTS

A practical example of cooperation at a high level, in which pure scientists, practical men, and the government each contributed, is afforded by the history of the manufacture of optical glass, in which the Germans reached such a commanding position before 1914 that the allies were sorely put to it to supply their deficiencies. Abbe, professor of mathematics and astronomy at Jena and particularly interested in the theory of optical lenses, had some made for him by the manufacturer Zeiss. Difficulties experienced in getting suitable glass led to the inclusion in the group of Dr. Schott, a trained chemist acquainted with the processes of glass manufacture. After two years of experiment a grant was made by the Prussian government (1883-84) for the continuance of the investigation, and in the final result a highly successful business was established, supplying over 100 varieties of optical glass and microscope objectives of unmatched quality, containing up to 10 lenses of which some were no larger than a pin head but were exact in curvature to the breadth of a wave of light. The Zeiss works specialized in quality. Leitz of Wetzlar developed production in quantity, introducing standardization and manufacture in series, and supplying a third of the world's product. Many similar instances could be given of the cooperation of university professors; and the government, which had already established research institutes in a number of lines, made the centenary of Berlin University in 1910 the occasion for the establishment of another school of research with a grant of 10 million marks.

SYSTEMATIC PLANNING

The German respect for knowledge and disposition to make use of the trained expert showed itself in all parts of their national life, not only in industry but also in trade, where the problems of merchandising were given more serious attention than in any other country, in agriculture and in forestry, and in the public service. The usual report from the German front during the war was that a certain operation had been carried out *planmässig*,

"according to plan." Every problem received patient study, was systematically analyzed, and methodically attacked. It is symptomatic that the best guidebooks to most countries of the world were those founded by the German Bäder generation ago. Shadwell noted as characteristic the fact that in a German town, even of modest size, the traveler could expect to find almost immediately a book store, and in the shop an excellent little guidebook and map of the place and its vicinity. He noted that Germans were rarely seen to hurry, yet had a way of arriving on time. The Germans had a saying that *langsamer Schritt*, slow march, won the war of 1870-71. The creation of synthetic indigo, one of the great achievements of modern chemistry, was the result of 10 to 20 years of patient effort, involving the expenditure of millions of dollars.

ADAPTATION

Of inventive geniuses of the first class, like Werner Siemens, the Germans have had relatively few. Their habit led them to effect their progress by a number of small steps rather than by one leap brilliantly conceived. No people in the world compared with them, however, in their interest in and knowledge of the progress effected by others. Every exposition was attended by Germans, not traveling for pleasure but studying the exhibits as scientific observers, to get suggestions for the improvement of their own methods. They imported from other countries models of the best machinery, studied and copied them, improved on them if they could. "They copy everything," said a representative of the McCormick Harvester Company, "but copying will never get more than the dregs of a trade. The country that originates will always be ahead." Proud in that conviction, Americans opened their works wide to German observers. A party of them, being shown through an automobile factory in Detroit and confessing themselves to be professional automobile engineers, were surprised when they were provided with pencils and paper that they might make full notes of everything of interest to them. And in the course of time, as the trade statistics show, they found large parts of the field of industry in which conditions allowed them not only to supply their own needs but also to export in competition with others. Nearly two-thirds in

value of German exports, 1913, were composed of manufactured wares. When American machinery did not answer the expectations of the importers they brought in American engineers and foremen to show them how to make the most of it.

SPECIALIZATION

The rapid development of manufactures in this period enabled the Germans to obtain the economies resulting from specialization. A plant which had offered a great variety of products, anything from a garden hoe to a steam engine, would concentrate its energies in a restricted line, and seek to achieve the highest efficiency in that. Different factories specialized in the production of engines, boilers, turbines, pumps, bicycles, sewing machines, and so forth, and so forth. With the production of a restricted group of products in large quantities the introduction of special machinery became profitable. The Germans did not go so far in this regard as the Americans, because the relatively lower wages of the workmen made it cheaper to turn out by hand some work for which in the United States a special machine would have been devised; but they advanced considerably beyond either English or French in their mechanization of many processes. "In the latest works nothing is touched by the hand that can be done by mechanical means," wrote an observer in 1908. And he instanced an incident which marked a notable departure from earlier European practice. The head of a machine plant showed him a large packing case containing a special machine which had been imported a little while before from the United States. It had been left unopened because in the interval something better had been devised, and it was already out of date. This manufacturer, it was noted, had no fear of spies in his factory, because his methods were always in process of change.

MERCHANDISING

One other feature of German organization in this period was characteristic and was very important. Unlike the English, whose goods in the period of their industrial success had "sold themselves," the Germans laid great stress on efficiency in marketing. They realized that they got no profit from a product, no matter how good or how cheap it was, if they did not sell it. The

real head of a business was commonly a merchant rather than a manufacturer, employing technical experts to direct the processes of production while he attended to marketing and finance. The founders of the great chemical industry, Bayer and Cassella, were business men rather than chemists.✓The German color works did not rely alone on the quality of their dyes to find them a market; they spent large sums on books of samples printed in many languages and distributed all over the world. German trade journals were printed not only in English, Spanish, and French, but also in Russian, Turkish, Chinese, and Japanese. An American traveler in South America noted meeting a German agent for the sale of cotton textiles who had been prepared for his work by training in a school for spinning and weaving, who was perfectly at home in five or six languages, and was given an income commensurate with his ability. Large industrial firms would employ experts with salaries very high according to the European standard, whose business it was to conduct the delicate negotiations involved in large contracts and requiring sometimes months of residence in a foreign capital. "In Germany trade is a passion," wrote a well-informed observer; "it is not an incident in a man's life, a variant on pleasure and sport, but the chief, primary, absorbing concern." Institutions of higher learning taught commerce as other scientific schools taught various branches of engineering.

Lack of space forbids a description of the various branches of industry which developed in Germany in the period under review, but their course can be illustrated by reference to characteristic features selected from the great mass of material.

COAL AND IRON

Statistics in the early part of this chapter illustrated the rapid development of the resources in coal and iron. The Germans had always been distinguished for their efficiency in mining, and in this period were still leaders in its development. Some of the Westphalian collieries had advanced even beyond the steam engine, using explosion motors and relying largely on the electric transmission of power. The minette of Lorraine had only half the iron content of the best American ores, but in plants rivaling the American in extent and technical perfection it was made to

yield its metal at costs below those of all other European producers. About 1900 the exports of iron and steel products doubled or tripled in the course of a few years. The government gave specially favorable rates on the stretch of railroad, over 150 miles, separating the ore and coke; Duisburg-Ruhrort, the place of transshipment on the Rhine, became the greatest internal port in the world, measured by the tonnage of goods. English observers found an efficiency which they could not match, due more to good plant and management than to lower wages of labor. The rapid development of the industry can be illustrated by the career of August Thyssen. Born in 1842, the son of a small manufacturer, he founded at Mülheim on the Ruhr, in 1871, a metallurgical establishment employing 70 workmen. In 40 years the works at Mülheim had expanded to embrace so many departments of iron and steel manufacture that they employed 7,000 workmen. Thyssen had become a multimillionaire, owning and operating coal and iron mines on a large scale and a fleet of vessels to transport his products.

MACHINERY

The success of the Germans in reaching a leading position in the manufacture of machinery was similar, though less spectacular. Cobden complained, so far back as 1838, that the Germans were developing the manufacture of machinery under the guidance of English workmen: "In almost every large town there were English mechanics instructing the natives to rival us." The manual worker learned the craft so well that in the later period he became at least the equal of his teachers. In old-fashioned works the individualism of the craftsman was, as in France, an obstacle to progress. A university graduate who essayed the life of a laborer (about 1890) found in a Chemnitz machine shop in which he was employed that the parts of engines and machine tools rarely fitted at first: "There was much to be done over; many a test had to be made; many a time the whole machine must be taken apart and set up again." Meanwhile, however, progressive manufacturers were adopting other methods. The firm of Ludwig Loewe, which held in the manufacture of small arms much the same position which the firm of Krupp held in making guns of larger bore, devoted two years to a careful study of the

methods of manufacture in different countries. It then imported a complete outfit of machine tools of all sorts from Connecticut, and introduced the methods of manufacture which were the most advanced of the time. Other manufacturers had already copied and adapted American machine tools. An observer competent to judge by long experience and acquaintance with American as well as European methods found the Düsseldorf Exhibition of 1902 "the finest show of machinery and tools ever seen." In 1907 Germany imported 9,000 complete machine tools, of which the largest part came from the United States, but in the same year it exported 52,000. The country had arrived at mechanical independence. An American engineer visiting it in 1921 found American machine tools used much less than elsewhere in Europe.

Some even of the hand trades were adapted to meet the new conditions. The reader doubtless knows the Sign of the Twins, as a brand of some German cutlery; it was registered at Solingen, nailed upon the church door by Peter Henckels in 1731, and has been borne by the same firm ever since. The work used to be done, as in England, almost entirely in little scattered shops, but the introduction of die forging, by which blanks for scissors and knives could be stamped by machinery in large quantities, saved an immense amount of time and labor, and enabled the Germans to export their product to Sheffield itself.

TEXTILES

In the manufacture of textiles the Germans developed no such superiority. A government investigation of the cotton industry in 1878 showed features resembling those of the English industry in the '30's. Mills were small and scattered; the effect of the political subdivisions of the past were still apparent. About half of the labor force continued to do their work in their own cottages. Hand looms gave place slowly to machine looms, and persisted down to 1914. Lacking the highly efficient commercial organization of the English industry the manufacturer was at a disadvantage in the purchase of raw materials and in the marketing of finished goods. German manufacturers imported a large part of their yarn from England, and in the making of piece goods could not compete with the English in staple lines. They

found a market by their readiness to make novelties and specialties. They carried hundreds of patterns and were willing to accept orders for a few hundred yards of fancy goods, on occasion down even to less than 100. It was not unusual for the trade to place an order for a new class of goods in Germany, and if the product proved popular to have it then manufactured in quantity in England. In silk the Germans managed, toward the close of the period, to threaten the supremacy of the French industry by the introduction of a more elaborate mechanical equipment. In the woolen industries, as in cotton, they did not in general attain the efficiency of the English; they found an outlet in the export market only by painstaking study. Makers of dress goods employed highly qualified designers, whose patterns and colors were subjected to the criticism of buyers for the trade before they were adopted. Shadwell was shown in Elberfeld some dress goods, manufactured of materials imported from England and then shipped back to England for sale. Asked how he could accomplish this, paying carriage both ways, the manufacturer replied, "It is a nice design; there is brains in it."

CHEMICALS

The industry which best illustrated German capacity to apply science to manufacture and get commercial profit from the trained expert was that engaged in making chemicals. Germany ranked below the United States before 1914 in the aggregate value of the output of chemicals, but the American product was composed mainly of heavy industrial chemicals processed by methods which had long been standard, while the Germans excelled in complex organic products synthesized by methods which they had developed, products with "brains" in them. The Germans supplied dyes, colors, drugs, perfumes, flavors, and so forth to all the world. In the past dyes had been obtained directly from natural products, blue from indigo, red from madder and logwood, yellow from saffron, scarlet from cochineal, and so forth. The discovery by an English chemist, Perkin, of an anilin dye made from a coal-tar residue started an almost endless series of developments in which the Germans were the unrivaled leaders. They imported from England and other countries the waste products of gas works and sent them back in the form of delicate

colors and precious drugs. Four-fifths of the world's dyes came from Germany; England itself used German dyes in that proportion.

The Badische Anilin und Soda Fabrik, at Ludwigshafen on the Rhine, was in 1865 an establishment employing 30 workmen. In 1913 it employed nearly 10,000. It had over 200 chemists in the works plus some 60 engaged outside. The plant was regarded as a model in construction and management. Here and elsewhere in the German chemical industry the equipment was of the most advanced order, including giant filters and vacuum pans, with use of superheated steam or of refrigerants to suit the process. The empirical method, reliance on trial and error, had been almost banished from the manufacture; a new process was introduced only after a long series of laboratory researches involving often the application of the most advanced abstract theory. Not only in the production but also in the application of dyes the Germans were recognized to be best; English manufacturers who wanted a particularly nice piece of work done sent it to them.

ELECTRICAL INDUSTRY

Another characteristic industry was that engaged in the manufacture of electrical equipment. Here again pure science and practical ability must be combined to attain the highest efficiency. The industry in Germany traces back to 1847 when Werner Siemens, a born inventor, combined with the mechanic Halske in a firm to manufacture a pointer telegraph which Siemens had devised. Down even to 1882 workers in the industry were too few to be separately enumerated in the industrial census; the telegraph was still the only important commercial application of electricity. In 1913 the industry employed 140,000; it accounted for 35% of the world's output to be compared with the United States, 29%, and England, 16%; and the value of its exports was double that of any other country. Germany had built nine-tenths in mileage of European street railways, and was a leader in electric installations in other continents, particularly South America. The A.E.G. (Allgemeine Elektrizitäts Gesellschaft, same meaning as General Electric Company, but not to be confused with the American corporation), founded in

1883, became the greatest manufacturing unit in Europe. The works at Berlin employed over 70,000 employees. Like the great chemical works they were models of efficient equipment. Coal brought from Silesia by rail was unloaded, conveyed, and fed to the furnaces entirely by mechanical means. A Corliss engine, dating from 1897, was the sole remnant of the period of reciprocating engines; most of the power was obtained from steam turbines.

BANKING

The growth of German industry in the period after 1870 was attended and greatly assisted by a development of the banking system. The first part of the period was marked by a great increase in the number of joint stock banks, which now no longer required the grant of special charters for their establishment. After 1890 the tendency was rather toward concentration. Under a variety of forms—mergers, stock holdings, understandings not expressed in formal contracts—many of the smaller and the provincial banks were brought within the sphere of influence of four great Berlin banks. Banking methods seemed in some respects behind English and American, particularly in the small use of checks as means of payment, but in the promotion of new enterprises the large German banks were as active and efficient as those of any other country and distinctly more progressive than the English or the French. It was highly characteristic that one of these great banks would finance an undertaking, say the installation of a lighting plant or street railroad system in South America, in large part by the sale of bonds in France or England, using the capital of a rival to extend German enterprise while the bank retained the stock until it had been seasoned by the success of the undertaking and could be marketed at a good figure.

BUSINESS COMBINATION

Another feature was noteworthy in the industrial development of the period, although the nature and extent of its contribution to progress have always been a matter of dispute. This was the union of separate industrial enterprises, for various purposes but particularly for control of the market. The German cartel or pool developed with the rise of large capitalist enterprise, in

the '80's. In the United States a pool designed to maintain prices was illegal, being in restraint of trade; in France or England it was not contrary to the law, but was not enforceable at law if members chose to disregard the agreement. In Germany the law accepted and upheld it, and the government itself on occasion became a member of a pool. An investigation of 1905 showed the existence of 385 cartels: in the coal trade 19, the iron industry 62, other metal industry 11, the chemical industry 46, the textile trades 31, and so forth. It is not possible here to describe the form and fortunes of these combinations, still less to appraise their results. Obviously they promised in a period of cut-throat capitalist competition to steady the course of industry, but critics have questioned their success in this regard, and have been able to point to the maintenance in operation of inefficient producers, and an added cost to the consumer, as evils attending their existence. At least and at the worst they illustrate that capacity for cooperation which Sombart thought to be characteristically German, and which is certainly in general, in these recent times of group action, a quality indispensable for success.

WAGES

From this survey of the upper levels of the German organization we must return to a consideration of the common workman. One important factor in Germany's success in export to foreign markets was, undeniably, the cheap labor which the manufacturer had at command. The reader must not be misled by the phrase "cheap labor." The service of the workman was cheap because it was good; he returned a "good pennyworth" for the money paid him. On the other hand, it was also true that the money wage of the workman was in general lower than the English standard, distinctly lower than the American standard. The English Board of Trade found conditions in 1905 to be as represented in the accompanying table, in which the figures of other countries are expressed in percentages of the English standard.

Country	Hourly Money		
	Wage	Lodging	Food
England	100	100	100
Germany	75	123	108
France	64	98	106
United States	240	207	125

Money wages rose greatly in Germany during the nineteenth century, and continued to rise up to the outbreak of the first World War. Real wages, measured by what the money could buy, rose also. Real wages were actually higher in Germany than would appear in a bare comparison of wages and prices because in Germany the state and the municipality provided so much more than other countries in the way of insurance and in the enjoyment of public utilities. Yet at best the standard of living of the German workingman's family was strictly simple. Göhre, the German student who entered a machine shop in Saxony to learn by experience what the German workman's life was like, received the usual pay of a beginner, 20 pfennig (5 cents) an hour, a little over \$0.50 a day. Older hands and skilled workmen earned up to \$5 or even \$10 a week. Assuming average earnings of \$5 a week, Göhre said: "There can be no question of want in this class of wage earners. . . . It is, comparatively speaking, one of the most prosperous and most favorably circumstanced of the whole body of working men in Saxony." These statements refer to a period about 1890. Wages rose considerably in the succeeding period, although the benefits were reduced by the agrarian tariff which caused a distinct rise in the price of food. A characteristic day wage shortly before the outbreak of the first World War would be from \$1.25 to \$1.50.

STANDARD OF LIVING

Critics of the industrial system were dissatisfied, and properly so, with this level. They found \$375 a year insufficient for the support of a small family, \$500 not enough for a large one. Yet if prevailing levels did not satisfy the ideal, they were rising and in some respects presented a favorable comparison with other countries. "The habits of the people!" The Germans, inured to a simple life and trained in an admirable domestic economy, made the most of a small income. Figures of average per capita consumption are significant. The average German consumed of wheat and rye, in a period ending in 1890, a little over a pound a day (392 lbs. a year); in a period ending in 1906 the consumption had increased by nearly 40% (to 545 lbs. a year), and exceeded even the French average. The consumption of meat, which was estimated in 1816 at 38 pounds a head in a year and

in 1873 at 65, had risen in 1912 to 115, very little below the English figures. The consumption of sugar nearly tripled in the course of a generation; it was only half as high as that of the United States and of England, but exceeded that of France and of other countries. A German in 1892 compared the standard of living of the factory workers of his country with that of the English in the '30's, but would certainly have modified his comparison if he made it nearer to 1914. The Germans, with less money, actually seemed to get more that was worth having in life. Other English observers agreed with Shadwell that the physique of the working class was on the whole superior to that of the English. As one put it, "In no large German towns is it possible to find such masses of undersized, ill-developed, and sickly looking people as are to be found in the poorer districts of . . . large British towns."

QUESTIONS

What important changes marked the year 1871? Illustrate industrial progress since then.

Compare the development of coal and iron with that in England and France.

Illustrate the development in horse power; in unit size of enterprise. Sketch the course of handicraft.

What were the characteristics of industry under the merchant employer? Explain its persistence.

What was the condition of factory industry in the '70's?

What were the causes of development as given by Sombart?

Illustrate the discipline of the people.

What results can be ascribed to the German system of elementary education?

Illustrate the importance attached to higher education.

Explain the advantages of long-established educational standards.

What moral qualities can be ascribed to the people?

Illustrate the importance of leadership in an organization.

What was the source of industrial leaders in Germany?

Illustrate and explain the use made of technical experts.

Sketch the career of an expert.

Illustrate German efficiency in the manufacture of optical instruments.

Illustrate the significance of the German word *planmässig*.

Illustrate their ability in adaptation.

Illustrate advanced methods in production.

Illustrate advanced methods in marketing.

Sketch the course of the iron and steel industry; the career of Thyssen.

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Illustrate methods in machine manufacture.

Illustrate characteristics of the textile industries: cotton, silk, wool.

Illustrate characteristics of the chemical industry.

Sketch and explain the development of the electrical industry.

What industrial contribution was made by the banks?

What are the facts and the theories of development of German business combinations?

What was the course of money wages and of real wages? How did they compare with those of other countries?

Illustrate the standard of living of the working class. Compare it with that of other countries.

READING

Excellent collateral reading is provided in William H. Dawson, *The Evolution of Modern Germany* (London, 1908, reprinted in a revised form in New York after the war). Other books available are: Earl D. Howard, *The Cause and Extent of the Recent Industrial Progress of Germany* (Boston, 1907, Hart, Schaffner & Marx prize); W. J. Ashley, *The Progress of the German Working Classes* (London, 1904); Wolf von Schierbrand, *Germany* (N. Y., 1903); J. E. Barker, *Modern Germany*, 5th ed., enlarged (N. Y., 1915).

Recent industrial development. (Clapham, chap. 11, pp. 278-322; Dawson, chap. 3, pp. 51-74.)

Industrial leadership. (Dawson, chap. 5, pp. 83-100)

Technical education. (Dawson, chap. 6, pp. 101-112.)

Capital and labor. (Dawson, chap. 7, pp. 113-138; Clapham, chap. 11, pp. 322-338.)

The German industrial worker. (Dawson, chap. 9, pp. 151-171.)

Cartels. (Dawson, chap. 10, pp. 172-205.)

The problem of population. (Dawson, chap. 16, pp. 304-324.)

CHAPTER XIX

Germany after 1918

POLITICAL FACTORS

In describing economic development it is possible, usually, to assume a set of political conditions, more or less fixed, and to show how the economic forces worked under those conditions. Changes in either part of the field, economic or political, are usually so gradual that in each they can be described over considerable periods without reference to other interests. In Germany after 1918, however, the movement of events was so rapid in both parts of the field, and the interplay of the economic and political factors was so vital, that it is extraordinarily difficult to present a clear picture of the course of development. The reader may be helped to follow the account presented in this chapter by the accompanying summary, which blocks out in rough fashion the chronology of the period, with reference mainly to political factors.

<i>Year</i>	<i>External</i>	<i>Internal</i>
1918	Armistice	Revolution
1919	Peace of Versailles	Inflation of the currency
1923	Occupation of the Ruhr	Collapse of the currency
1924	Dawes plan	Stabilization; inflow of foreign funds
1929-30	Young plan	Outflow of foreign funds
1931	Moratorium	Credits frozen

ECONOMIC CONDITIONS

(Germany emerged from the war in a condition close to complete economic collapse.) For years it had been living on its capital. In agriculture it had been taking crops without restoring the fertility of the soil; in manufacture it had almost entirely used up, except for coal and iron, its stock of raw materials; 1.8 million of its adult men had been killed and over 4 million wounded; the whole population had been underfed for years.

By the terms of the Treaty of Versailles and the settlements which ensued, it ceded 13% of its area in Europe and all its colonies. The ceded territory, including Alsace-Lorraine and Upper Silesia, was above the average in resources, latent and developed, and is estimated to have contained 15% of the country's productive capacity. The country lost the larger part of its iron ore, a considerable part of its coal and of its metallurgical plants; the new frontiers cut vital connections in the established iron and steel industry.

REPARATIONS

In addition, the country in accepting the Treaty of Versailles had, to use the common phrase, signed a blank check. It bound itself not only to pay within the next two years the sum of \$5 milliard (\$5,000,000,000), but in addition such sums as the Allied Powers might determine as necessary to cover war damages. Into the unhappy course of the reparations settlements it is not necessary to enter here. They belong in the field of purely political history. The governments of France and of England had made to their peoples the extravagant promise that Germany should pay the costs of the war, and found themselves forced to demand the impossible. France particularly was obdurate in demanding payment, feeling that even if the burden laid on Germany was greater than that country could bear there was compensation in having on the eastern frontier a neighbor so crippled that there could be no threat to the security for which the French yearned.

REPARATION PAYMENTS

The amount which Germany actually paid on account of reparations has been the subject of bitter dispute. (To the end of 1922 the Reparations Commission conceded the payment of \$2 milliard,) while some Germans claimed that the country had paid over \$10 milliard. The truth undoubtedly lies between those extremes; an impartial American estimate put the sum at over \$6 milliard. The larger part of the total involved no cash payment but the transfer of property, the exact value of which it was hard to appraise. Germany made over to the allies a vast amount of fixed property, including railroads in the ceded territory and shipping, and in addition, according to the terms

of the treaty, made every year deliveries in kind of great quantities of coal and coke, chemical products, and timber and other supplies for reconstruction in the devastated districts. A very small part of the payment (a little over \$300 million) was made in gold which had been held in the reserve of the Reichsbank. Aside from the transfer of property and deliveries in kind, most of the funds were transferred by bills of exchange payable in foreign currencies, sterling, francs, or dollars, acceptable as means of payment in the allied countries.

INFLATION OF CURRENCY

Germany was at this time, as will be realized from the introductory description, in no condition to get these bills of exchange in the ordinary way, by exporting a surplus of goods. (Actually, it was forced all through this period to import much more than it exported. It had to buy food and replenish its stock of raw materials; it had to reorganize its industry on a peace basis; it must import before it could begin to export.) To get the bills of exchange needed for reparation payments Germany realized on such foreign investments as were left at the close of the war, sold to foreigners bonds, shares, and real estate, and sold paper marks. This was the period in which the German currency was depreciating. At the gold par a dollar would buy a little over 4 marks. When exchange operations were resumed, after the war (January, 1919), it would buy about 8; in December, 1919, nearly 50. In 1920 the rate, roughly measured, varied between 40 and 90; in 1921 between 60 and 250. Depreciation went on at an accelerated pace in the latter part of 1922 and in 1923 until it reached points at which the American dollar would buy, instead of 4 marks millions, billions, and finally trillions of the paper currency. The depreciation was irregular and uncertain; many people thought that Germany would restore the former standard or would at least resume gold payments on a basis much above the prevailing quotations. To speculators the world over the paper mark offered irresistible attraction. It has been estimated that during the years 1919-22 foreigners bought paper marks up to a maximum of nearly \$1,000 million—and a good share of this total was, in fact, composed of American dollars, spent by speculators in the United States. The foreign currencies received in

payment for the marks were remitted to the allies, in part payment of reparations, and the paper marks, like the Confederate currency in the United States, are now valued only as a curiosity.

REASONS FOR INFLATION

The economic and social effects of the period of inflation, 1919-23, will receive attention later. We are concerned here only with the public aspects of the process. Why did the German government loose the flood of paper money which caused the depreciation of the mark, and raised the cost of living in December, 1923, to 1,247,000,000,000, compared with the par, 1, of 1913-14? Some people have charged that it was a deliberate conspiracy designed to spite the Allies. Doubtless Germany was desperate in this period, looking forward to an endless future always crushed under debt; and doubtless some of the limited class who gained by depreciation contributed, whether consciously or not, to further its course. But, given conditions as they were, it is hard to imagine any other outcome of the situation. (The revolutionary government, however honest in intention, was inexperienced and weak. Imbued with the principles of a doctrinaire socialism, it was indulgent to the people in legislating for their welfare, without counting the cost; when the bills came in it had not the funds to meet them, and lacked resolution to increase the burden of taxes. There were times in which the government strove, as earnestly as it could, to set its house in order. Without the charge of the reparation payments it might have succeeded. With this added to other charges, at a time when the economic organization was still shattered, the case was hopeless. The government could not pay reparations with paper marks, but could meet a deficiency in its domestic budget by the issue of paper money, and constantly did so. Then prices would rise, government expenses would increase, the taxes which had been adjusted to a lower level of prices would be still less adequate to cover expenses, more paper money would be issued to make up the deficit, and so the process would continue in a vicious circle.

OCCUPATION OF THE RUHR

In the middle of 1922 the tension was so great that the German government asked for a two-year moratorium in the repara-

tion payments as the only means to avert financial collapse. England would have agreed to this but Poincaré, at the head of the French government, asserted that Germany was deliberately defaulting and must be made to pay by force. Then began (January, 1923) the occupation of the Ruhr, the district named after a small river east of the lower Rhine, in which were situated the most important coal mines and iron and steel works of Germany. The invasion was met by "passive resistance." All reparation deliveries ceased; the people in the occupied region worked only under compulsion, and were supported by contributions from the rest of Germany. This was the period in which the mark began its headlong fall, ending before the end of the year in its extinction. In its place was substituted a new and stable currency, and with the stabilization of the currency in 1924 a new chapter in German history began.

The occupation of the Ruhr, "costly, vindictive, and short-sighted" as it has been well termed by an American author, brought to the French loss rather than gain, and forced upon them at last a realization that the terms of reparation must be amended if Germany were to remain solvent and be in a condition to pay anything. A committee of experts, under the chairmanship of an American, Dawes, presented a plan which was accepted by all the powers interested, and which, if it did not provide a final solution of the problem, offered at least a breathing-space of some years, in which passions might cool and conditions might approach the normal.

THE DAWES PLAN

In contrast to the previous attitude, the Dawes plan recognized that the internal economic and fiscal conditions of Germany were of vital importance, that the country must be assured a stable currency and sound public finance, and be allowed to recover its economic strength if it was to continue payment of reparations. So for a year payments were altogether remitted, and even a loan was granted the country, that it might set its currency system in order. Payments were to rise gradually to an amount (\$625 million a year) much less than any which had previously been considered acceptable, and arrangements were made for the collection of the money in Germany and its transfer to the creditor

powers so as not to endanger the stability of the currency or of the government's budget. During the five years of its operation the Dawes plan seemed to meet the needs of the situation. Reparations were paid punctually and in full. Germany, faced at last with definite demands which it could meet, recovered its economic strength with extraordinary rapidity, as will appear later in the chapter. The period of the plan may be regarded as a new era. Yet, as already intimated, it was not a final settlement. The Dawes committee, while it fixed the annual payments, had no right to determine the period over which they should continue, or the sum to be paid in the aggregate. The management of the plan involved foreign control of German domestic affairs, in matters of finance, banking, railroads, and so forth, which an independent country could not tolerate indefinitely. The Germans had asserted that the original Reparations Commission exercised in Germany greater rights than the German emperor had ever possessed; the Agent General for Reparation Payments (an American, S. Parker Gilbert) exercised in some ways even more power. Germany had practically been treated like a bankrupt firm, to be administered by a receiver for the benefit of the creditors.

During the five full years of the operation of the Dawes plan, and the fraction of a year following (Sept. 1, 1929, to May 17, 1930), before the succeeding Young plan was substituted for it, Germany paid on reparations account a total of nearly \$2 milliard (7,993 million gold marks), of which France received over half, England over a quarter, and Italy, Belgium, and other powers the remainder. The plan, as said above, fulfilled the designs of its promoters in giving Germany at last stable financial conditions and enabling that country to meet the demands upon it promptly and in full. Why then was it found necessary in 1929 to assemble another committee of experts, to study the situation afresh, and to propose an amended plan?

NEED OF AMENDMENT

The answer to that question lies partly in the dependent position imposed on Germany by the Dawes plan. Foreigners established in Berlin managed some of the country's most important interests. Not until Germany assumed full responsibility for

raising and remitting the reparation payments in such a way as it thought best, quite free from foreign tutelage, and with some definite prospect of finally ridding itself of debt, could the situation be accepted as according with the position of a sovereign state. There was, however, another element in the situation which indicated the necessity of revision. The payments which Germany had made, prompt and full as they were, had not been made from the country's own resources. Germany could get the means of remitting payments abroad only by obtaining a favorable balance in the international relations of debit and credit, giving it a surplus credit which it could assign to satisfy the demands of the powers to whom reparations were due. The largest debit item consisted of goods imported and needing to be paid for; the largest credit item consisted of goods exported, for which the foreigner must pay. Leaving aside some smaller factors (service of shipping, etc.), in the long run Germany could pay reparations only by a surplus of exports over imports. The disquieting feature of the situation under the Dawes plan, from this point of view, was the fact that except for brief periods imports continued to exceed exports in value. So far from liquidating its debts Germany was actually running deeper into debt. It was paying reparations with borrowed money.

GERMAN BORROWINGS

The Dawes plan had promised to settle the German financial and economic organization on a firm foundation. It had encouraged the Germans to renew their industrial enterprise with confidence in the future. Their crying need was capital. They needed it to reorganize their industries, to provide stocks of raw material, to finance their business in the period of waiting before returns came in. The active demand for capital forced the rate of interest up so that the ordinary borrower must pay 10% or more on a commercial loan. Bonds were offered at a price which made their yield seem extraordinarily attractive to an investor. Foreign capitalists were not insensible to the inducements which Germany now offered them. The amount of foreign capital which flowed into Germany in this period has been estimated at something like three times the amount which Germany sent out in the form of reparation payments. A large part of the

capital was employed to finance industrial recovery, and was in deed essential to it. Some of it, borrowed by municipalities for the extension of public undertakings (on occasion the construction of athletic fields and swimming pools), might better have been left unspent, if judged from the strictly economic viewpoint; some tendencies to extravagance resisted all efforts of governing authorities to curb them, but after all were not a large element in the situation. The critical fact was the failure of export industries to find a market abroad which would give the country a surplus credit on which to draw for the payment of reparations, and which would provide employment for the large number of people out of work at home.

THE YOUNG PLAN

Under these conditions the German government asked to have the situation reviewed, and another committee of experts met at Paris, under the chairmanship of Owen D. Young, who had been a leading member of the first committee. The new plan of reparation payments devised by this committee went into effect in May, 1930, but remained in force for little over a year, when its operation was suspended by a moratorium proposed by President Hoover, to apply to payments on all international public debts growing out of the war. The official recognition by the United States, the chief creditor country, of the disturbing influence on the economic recovery of the world exercised by the international debts, was an indication that the question of reparation payments would sooner or later be reconsidered as part of a larger problem. Of historical interest, at least, are some features of the Young plan which marked it as an advance upon its predecessor. For the first time the sum total of reparations was determined; Germany was to continue payments over a period of 59 years, to 1988, but the annual payment was considerably reduced (by one-fourth at the start and by one-fifth on the average), below the level of the Dawes plan; and provision was made by which Germany was to benefit if the United States reduced its demands on debtor countries. Most of the apparatus of foreign control, which had been so distasteful to the Germans, was abolished, and a Bank for International Settlements was established in Switzerland to administer the operation of the plan. If

conditions had remained as they were when the experts met in 1929, or had improved, the Young plan might have worked successfully. The crisis of that year, initiated by the crash on the New York Stock Exchange and spreading all over the world, made failure certain. Creditors who had lent large sums to Germany on short time, practically on demand, hastened to withdraw their funds, but found their credits "frozen." The sharp decline in prices made still more difficult the financing of the German export trade. The Hoover moratorium of 1931 was merely the acceptance of the inevitable, a recognition that under conditions as they were insistence on the payment of the war dues could lead only to disaster.

The foregoing sketch of the history of the reparation problem provides a background for the history of the economic development of the period. Before proceeding, however, to a study of the course of different branches of production it will be profitable to examine with some care the effects of such an inflation of the currency as Germany experienced in the five years, 1919-23.

EFFECTS OF INFLATION

When a currency depreciates, the rise of prices is uneven. Some prices are fixed by contract and do not rise at all. Rentals are commonly determined for a year or more; interest on mortgages or on bonds may run for years, payable in a definite number of units of currency, marks for example, without regard to the purchasing power of the unit. Other prices are slow to change. Retail prices are of this sort, greatly affected by custom; wages also, adjusted to a conventional standard and modified by a bargaining process or by governmental action long drawn out, always lag in response to a change in the money unit. Even the "price of money," the rate of interest charged on loans, does not keep pace with inflation when the depreciation is at all rapid; it also is affected by custom, and fails to take into account the shrinkage in the value of the capital when the loan is repaid in depreciated currency. Consider now the effect on different classes when the money unit shrinks to half its former value in a year, a condition fairly representative of the depreciation in postwar Germany before the catastrophic decline late in 1922. Wage earners, the

largest class in the community, found that their money wages, even if they were increased and considerably increased in terms of marks, brought them in less of the necessities and comforts of life than they had had before; their real wages had fallen. Salaried employees and recipients of pensions found themselves in a similar or in a worse position. Members of the middle class whose income consisted in the rentals of real estate or in interest on bonds or mortgages were in a hopeless position; they suffered more than during the war itself; many were submerged or reduced to dependence on charity. It is characteristic that when the government intervened in behalf of this class, by a Valorization Act passed in 1925, it offered to an original investor in government bonds a small allowance only when his total income was less than \$200.

GAINERS BY INFLATION

While most people lost, and some were irretrievably ruined by the inflation, some gained. Debtors saw the amount of the debt and the sums due in interest shrink before their eyes. Speculators who "sold the mark short" made huge sums at the expense of the purchasers. Employers of labor, particularly those in business on a large scale and getting the benefit of the rise of wholesale prices, which were first to respond to inflation, produced at lower cost (wages, rent, interest) and made great profits. The small class which gained most was that of the speculative investors. Although interest rates rose constantly, and at one time reached 20% a day, 7,300% a year, they never kept pace with the depreciation of the mark. The borrower would find that he could pay the high interest and repay the principal in depreciated marks, and still have a handsome surplus; the banks were paying him for the use of the capital which they provided. This was the period in which bold spirits, keen in the use of credit, built up business combinations of fantastic dimensions

LOSSES FROM INFLATION

From the bookkeeper's viewpoint losses and gains resulting from the inflation should balance. Actually the losses, both economic and social, vastly exceeded the gains. Anyone with money got rid of it with feverish haste, lest it depreciate on his

hands. Some of it was spent lavishly; travelers were struck by the extravagant life of the large cities. More of it was invested unwisely, in the construction of plant and equipment which afterwards had to be scrapped or remodeled. Germany would have suffered in any event from the dearth of liquid capital which made it dependent on advances from foreigners in the succeeding period, but its dependence would not have been so great if it had been able to conserve its own capital more wisely in the period of inflation. More serious than any money losses and scarcely to be measured in money was the demoralization attending conditions in which service and reward stood in no relation to each other, and accepted standards of social and economic justice were flagrantly transgressed.

AGRICULTURE

German agriculture, in 1914-18, felt the strain to which all parts of the economic organization were subjected. The allied blockade cut off former sources of food supply, and forced German farmers to press to the limit their own resources. Products were sold at prices fixed by the government, and the producers, to make both ends meet, were forced to spare costs in every way possible, managing their enterprises in a hand-to-mouth fashion, without regard to maintenance of the fertility of the soil. The government took horses for military service, and killed cattle as competitors with human beings for food. German agriculture lived on its capital and emerged from the war badly crippled. Its course is pictured in the accompanying table.

<i>Year</i>	<i>Production (Million Tons)</i>				<i>Consumption (Thousand Tons)</i>		
	<i>Cereals</i>	<i>Potatoes</i>	<i>Sugar</i>	<i>Beets</i>	<i>Nitrates</i>	<i>Phosphates</i>	<i>Potash</i>
1913	13	40		14	200	630	550
1919	9	21		6	110	137	670

AGRICULTURE DURING INFLATION

The period of inflation offered to owners of mortgaged farms the opportunity to rid themselves of their debts by payment in depreciated currency, and to farmers paying a fixed rental the advantage of the rising prices for their products. Peasants with surplus funds in hand hastened to spend them. Travelers were

struck by the apparent prosperity of the country people. A Frenchman noted one village in which six pianos had been purchased; one family, it was said, bought two pianos at a time. Peasant families were seen in the towns decked in jewelry and drinking wine. The urge to get rid of money before it depreciated led also to many permanent improvements, and to the purchase of a great amount of farm equipment. For this last purpose it is estimated that half of the available funds were spent, but often unwisely. A peasant would buy a threshing machine which he could use for only a week in the year, a tractor which would be in operation for less than a month of working time.

STABILIZATION

The stabilization of the currency (1923-24) put an abrupt end to these conditions. The products of other countries, cheaper and often better graded and more attractive to the purchaser, flooded the market. A short harvest (1924) was sold for what it would bring; credit was tight, and the German farmer, like others of his kind, lacked business sense. The farmer got for his products prices which continued low in relation to his costs, in wages and supplies; this was the phenomenon of "the scissors," the spread between agricultural and other prices, to be discussed later as it showed itself in Russia. He was favored only in the purchase of nitrates and agricultural machinery, of which the production was so efficient that prices remained low. In four years of stable currency German agriculture incurred debts approaching \$2 milliard; the amount of debt was mounting toward the prewar total (11.5 milliard marks, to be compared with 18 on the same area before the war). East Germany was particularly hard hit. Rye, the major crop of that region, had fallen in the estimation of the German consumer, and was meeting sharp competition from Poland. Many farms in the east were mortgaged up to the full value of the land.

SCIENCE IN AGRICULTURE

The Germans met the problems of their postwar agriculture in a characteristic way, by methodical analysis under government control of technical means of improvement. An experiment sta-

tion established in Saxony studied the application of the Taylor system to agriculture; made time and motion studies of agricultural operations; showed how many more potatoes women could sort if taught a better posture and provided with better implements; calculated the percentage efficiency gained by making fields regular in shape. Following American examples, a considerable approach was made toward a standardization of agricultural machines and their parts. Better methods of grading, packing, and marking were taught. Progress was appreciable but it was bound to be slow in a country where agricultural practice had been fixed by centuries of usage, where different kinds of scythes were used in the north and in the south, where on one side of a river (the Murg in Baden) a people of Allemannic descent turned their hay with a wooden fork, while on the other side, under identical conditions, a Frankish population used a rake. In Germany as in France there was clear evidence that rural life was changing, that the old institutions of land and family were dissolving, but the process was a slow one, operating over decades if not over generations.

THE SMALL INDUSTRY

In industry as in agriculture Germany still retained many representatives of an organization almost medieval in its simplicity. An agent of the American Department of Commerce found (in 1924) in the Saxon Erzgebirge more than 40 little communities, with 50,000 to 60,000 souls, in which the families were devoted to making wooden toys; one little town would make guns, another drums or helmets, another Noah's arks or miniature cottages, and so on. Drawn into the current of the world's affairs by the spread of commerce, such people were helpless in the confusion of the war and the following period. The blockade cut off the supply of Angora goat hair of which dolls' wigs were made. Makers of bisque-head dolls lost their livelihood when, in the distant United States, the tariff on dolls was doubled and a change of fashion brought the unbreakable or the character baby doll into favor. Of such small producers there were still millions in Germany, engaged in handicraft or working for a merchant employer. We must concern ourselves here, however, not with them but with representatives of the new order, who in contrast to

them were organized in forms ultramodern in their extent and in their complexity.

JOINT STOCK ENTERPRISE

The conditions of the time led to a great spread of corporate enterprise. The number of corporations proper and of limited liability companies doubled between 1913 and 1926. The fluctuations of the currency and the burden of taxes both contributed, in different ways, to this result. The paper "securities" representing rights in an enterprise developed in a great variety of forms: not only common stock, preferred stock, and bonds of the old kind, but stock of different classes, some with plural votes attached, convertible stock and bonds, various forms of options, warrants, and scrip. Such changes, natural in a period of rampant speculation, facilitated the operations of shrewd financiers who found it possible to obtain the control of enterprises with the expenditure of relatively little of their own capital, and who managed often to conceal a control which was none the less real.

CARTELS

Above the separate companies rose various forms of combination. One might have expected that the socialist government which assumed power after the revolution would nationalize industry in accordance with the principles of Karl Marx. Even before the war there had been an approach to nationalization in the coal and potash industries. The new government, however, showed remarkable timidity or prudence—the judgment on its course will depend on the viewpoint of the observer. It has been likened to the barking dog, very savage when on the chain, who becomes very quiet when he is freed. It let private capitalism work its way with little hindrance. Cartels or pools grew four-fold in number. They had been favored by the war, as the government had found them convenient instruments in the control of industry for military ends. In the succeeding period of inflation they were not so effective. This was a time in which manufacturers sought to protect themselves against the rising prices of their raw materials, while they still enjoyed the higher prices for their products.

COMBINES

Obviously the most certain way to accomplish this end was to control the sources of supply, and the years 1919-24 were marked by the rapid development of vertical combinations, covering the course of manufacture from raw material to finished goods. The inflation which required correction in this way supplied ready means for the merger of enterprises under unified control. Prices of stocks had not kept pace with the rise of other prices; a German author described them as *spottbillig*, "dirt cheap." A man who formerly could get 10 suits of clothes made by the sale of 1 share of A.E.G. (German General Electric) would find that 1 suit cost 3 shares. Furthermore, as noted above, bank loans could be got for less than nothing by those who were adept in credit transactions. The merger movement developed with extraordinary speed. Of a sudden it would appear that a firm formerly insignificant had acquired control of a great group of enterprises. Some magnates were intoxicated by success. Hugo Stinnes, already a great capitalist, brought under his control "coal mines, iron and steel works, metal and machinery, electro-technical and automobile factories, shipbuilding plants and shipping lines, paper, printing and publishing plants, lumber and textile mills, sugar factories, petroleum companies, electric power utilities, farms, banks, hotels and insurance companies." Less spectacular examples of the expansion of control were common.

The stabilization of the currency, 1923-24, put an end to the conditions under which consolidations and mergers had sprung up like mushrooms overnight. Some of the monstrous combinations, like that of Stinnes just described, broke in pieces when prices ceased to rise, and when debts must be paid in good money. The movement to combination did not cease. Cartels came back into favor, and some combines, like the steel trusts, grew to unprecedented size. The guiding principle, however, of these years of Germany's recovery after 1924 was no longer speculation but was efficiency in production. After the delirium of inflation the Germans set themselves with painstaking care to study the possibilities of their situation, and to endeavor by scientific method to win back the ground that they had lost. This was the period of the "rationalization" of industry.

RATIONALIZATION

Rationalization involved all that which in America was included in the term scientific management: avoidance of waste, whether of human effort, of raw material, or of power; standardization; ordered planning. It meant something more, however, than was commonly included in the American use of the term. It was made to apply not merely to a single factory but to a whole industry and even to the whole society; it spread out to include not merely the making of goods but also their transportation and marketing; it was science applied to economic life in general. The Germans had begun before the war to adopt advanced American methods in manufacture. Their conditions were different and they were sometimes disappointed by the results which they obtained. Labor was cheaper; capital was dearer, especially after the war. They read and talked more about Henry Ford and his system than did any other people, but they found that the method of chain assembly which he had brought into prominence (*Fliessarbeit*, "flowing labor," as they termed it) had its limitations, and offered no sure guarantee of profit. If some brilliant successes were offset by failures, they tried, at least, everywhere to apply the new principles of a rational economy. They accepted them, as a French author has said, with the enthusiasm with which they had accepted Luther's preachings in the sixteenth century, it was the Reformation in the field of economics. The government mobilized public resources to foster the movement; institutes and councils were founded to guide and further it.

INDUSTRY DURING INFLATION

In industry as in agriculture, inflation had led to the investment of money as rapidly as possible in some fixed form in which it would not depreciate. Enormous sums were spent on the extension of plants. Much of this investment was wasted. Equipment was uselessly duplicated. Before the war the Germans had 25,000 locomotives and 650,000 cars to provide transportation. After inflation they had 31,000 and 750,000 for their reduced needs, although in the interval, by the terms of the armistice, they had had to surrender 5,000 and 150,000. Inflation had pro-

tected the home market from competition, and had reduced wages to a bare minimum, so that the mechanization of industry by labor-saving devices was retarded and investment was made in forms technically antiquated. The idea, often expressed, that Germany benefited greatly by the investments in fixed plant in the inflation period, is mistaken. When the currency was stabilized and manufacturers must produce under conditions like those prevailing in other countries, it was found that much of the new plant must be scrapped, much of it must lie useless, and much of it must be remodeled. Mistakes of the inflation period had later to be repaired under much more difficult conditions of credit and of competition.

PRODUCTIVITY

If Germany did not succeed in the period of stabilization, from 1924 on, in setting industry on its feet so that it could carry its own burden plus the added charge of reparations, the fault lay rather in the disturbed conditions of the outside world than in any lack of energy and intelligence at home. The critical test of success was the development of an active export trade, and, as will appear, that was not attained. The leaders of German industry contributed at least all that could fairly be expected of them to prepare the country for it. Productivity had sunk to a low point in the later years of the war, when in spite of long hours and the urgency of the military situation mere lack of nourishment caused a decline of 30 or 40% in the output of a worker. The introduction of the 8-hour day, one of the first measures passed by the revolutionary government, and the persistence of subnormal living conditions kept the output low during the period of inflation. The reorganization of industry and the maintenance of better standards of life and work raised productivity, in spite of the shorter working day, to or above the pre-1914 level.

COAL

The daily product of coal per worker in the Ruhr, measured roughly in tons, in 1913 was 0.9. During inflation it sank to 0.6 and below. In 1924 it approached the 1913 level; in 1926 it passed 1.1. Stinnes had asserted that the geological peculiarities

of German coal veins forbade the introduction of coal-cutting machinery. By 1927 more than half of the coal in the Ruhr was mined in that way, and the proportion was increasing. The existence of the great industrial combinations made possible something that cannot be accomplished in the United States or in England, the concentration of production in the best mines; and these were elaborately equipped with all sorts of mechanical devices. Rationalization did not stop at the mine. An English commission reported in 1925 that the Germans were getting 10% more effective heat from their coal than they got before the war. The coal combination sent its experts to the industrial plants to teach economy in the use of fuel, convinced that its own interests would thereby benefit in the long run. The period saw an extraordinary development in the use of lignite, "brown coal" as the Germans call it, of which the United States possesses enormous quantities left unused. Most of the lignite beds are near the surface and were exploited by open workings, completely mechanized; "from the time the first hole is dug until the lignite is ready for use in furnaces or briquet factories, no hand touches it." Near the lignite beds were established chemical works and great central power stations, which got their fuel at the equivalent of about \$1.50 a ton of real coal, delivered at the furnace. One of these central power plants, consuming 10,000 to 15,000 tons of lignite a day, would have a working staff of only a few mechanics; one man at a switchboard controlled the flow of lignite into 80 furnaces, and the ashes were sent back by pneumatic power to the bed from which they came.

IRON AND STEEL

Similar progress marked the course of the iron and steel industry under rationalization. If the daily output of a worker in the iron industry in 1925 be taken as par, 100, it had risen in 1926 to 120 and in 1927 to 140. In this industry a huge combination, the United Steel Works, came to control about half of the trade, with an output of raw steel almost equal to that of all Great Britain. It was equipped to supply some 30,000 distinct products, and aimed by carefully studied specialization to produce these with the greatest economy. The less efficient mines and plants were closed down, and the production of various

classes (structural steel, rails, plates, tubes, wire, special alloys, and so forth) was distributed among the different plants so as most to economize costs in production and marketing, to enhance quality, and to facilitate effective administration. The industry was judged to be better equipped for efficient production than that of any other European country, and to be not far behind that of the United States. The Krupp works, outside the combination, faced a difficult problem at the close of the war. They had specialized in military supplies, and at one time during the war employed 167,000 workers. The demilitarization of Germany by the Treaty of Versailles deprived them of most of their market. They had to seek new outlets in the manufacture of agricultural implements and machinery, cash registers, locomotives, motor trucks, and so forth. Their working force declined from over 40,000 in 1920 to less than 20,000 in the early part of 1926. Vigorous and extensive measures of rationalization were adopted in all parts of the works. Coal mines were mechanized and the cost of transportation of coke was reduced by the introduction of 50-ton cars, mechanically loaded and unloaded. The older furnaces and factories were scrapped, and the new buildings erected during the war (of which two had a roof span of nearly twenty acres) were equipped for specialized production. The firm employed in 1929 90,000 workers, a larger force than that employed before 1914.

CHEMICALS

The German chemical industry suffered in the war a serious set-back in its position. Other countries which previously had relied upon Germany for the supply of many products learned how to produce for themselves when the German supply was cut off; the patents which had protected German processes were abrogated in the countries at war, and were taken over by their nationals. The Germans applied themselves in the characteristic fashion to win back the ground which had been lost. An immense combination was formed, the Community of Interests of the Dye Industry (*Interessen Gemeinschaft Farbenindustrie*), which included the six leading chemical companies and was the most highly capitalized industrial corporation in the country. This concern spread out, by stock ownership and by the forma-

tion of working agreements, so as to extend greatly its influence both at home and abroad. In the United States it was represented by the I. G. Chemical Corporation, in which it shared control with the Standard Oil Company of New Jersey and the Ford Motor Company. The superiority of the processes which it controlled for the manufacture of synthetic nitrates, for the hydrogenation of coal to obtain gasoline or lubricating oil, and for the making of other products, gave it a standing in every country of importance. In Germany the chemical combine applied a policy of rationalization similar to that pursued by United Steel Works. It closed down obsolete plants, standardized products so as to avoid the waste incident to duplication and excessive variety, and distributed its output among units highly specialized and equipped with the most efficient apparatus. An elaborate organization, marked by a territorial division into four distinct areas, was devised to provide for the management of an industry which offered such difficult questions of technique as well as of marketing and finance. The combine could not win back the position which Germany had formerly held in the supply of dyes. The German share of the world's production of aniline dyes, which in 1913 had been 80%, fell to less than half. Loss in that part of the field was made up by progress in other directions. The production of synthetic nitrates, for use mainly as fertilizers, came to be the most important branch of the industry, with a value greater than that of dyes, drugs, and other coal tar products combined. The production of artificial silk and synthetic alcohols developed rapidly. The manufacture of gasoline and oil directly from coal or lignite was a problem persistently attacked, and promising, to judge from previous experience, to be solved in time by German scientific method.

The few industries reviewed above must suffice to illustrate the way in which Germany adapted itself to postwar conditions. The prewar product had been reached and passed by 1927; the share which industry contributed to the total national income had mounted from 40 to 50%, and was still increasing. The next chapter will measure the result of the development, as tested by the country's foreign trade and by the standard of life of the working classes, and will describe the relapse leading to the rise of Hitler, and the revolution in political and economic conditions under National Socialism.

QUESTIONS

What events, in external and domestic affairs, marked the years 1918, 1919, 1923, 1924, 1929-30, 1931?

Summarize the losses of Germany in the first World War.

What amount was Germany bound to pay in reparations; why?

What amount was paid to 1922? In what forms were payments made?

How did Germany get funds in foreign currency to make payment?

What were the reasons for the inflation of the currency? Why was the process, once started, hard to stop?

Where and what was the Ruhr? What conditions led to its occupation?

What results followed?

What were the main features of the Dawes plan, with respect to its introduction, amount of annuities, protection of German interests?

What were the results of the Dawes plan?

What were the major considerations calling for a revision of the Dawes plan?

Why did foreign capital flow into Germany in this period; to what purposes was it applied?

What were important respects in which the Young plan differed from the Dawes plan?

What conditions led to the Hoover moratorium of 1931?

Distinguish the response to inflation of different classes of prices.

Distinguish the effects on different classes of people.

What classes gained by inflation, and how?

Why did not gains balance losses?

What was the course of German agriculture during the war?

What were the effects of inflation on spending and investment?

What conditions followed stabilization of the currency?

Illustrate the application of scientific method, and the conditions it encountered.

Illustrate the persistence and conditions of small-scale manufacture.

Illustrate the development of the industrial organization with respect to stock companies; cartels.

Explain the rise of large combinations during inflation; illustrate.

What change marked the combination movement after stabilization?

Explain the term "rationalization" as understood in Germany. Why did not American methods give the same results as in the United States?

What was the character of industrial investment during inflation?

Explain the gain in productivity after stabilization.

Illustrate with respect to coal; lignite, iron and steel; chemicals.

READING

By far the best book for collateral reading on the subjects covered in this chapter is *The Recovery of Germany*, by James W. Angell (New Haven, 1929); references below have been restricted to that book. Books which may be used to supplement it are Walter Meakin, *The New In-*

dustrial Revolution (London, 1928), and Sir Philip Dawson, *Germany's Industrial Revival* (London, 1926). The reparations problem, which lies outside the scope of the present volume, is well presented in *Germany's Capacity to Pay*, by H. G. Moulton and C. E. McGuire (N. Y., 1923), and in other publications of the Institute of Economics. Periodical literature is full of articles on subjects in all parts of the field.

War losses. (Angell, pp. 7-16.)

Inflation, social results. (Angell, pp. 18-39.)

Inflation, economic results (Angell, pp. 40-60.)

The Dawes plan. (Angell, pp. 61-81.)

Reorganization: coal, coke, lignite, power. (Angell pp. 82-103, 130-138.)

Iron and steel. (Angell, pp. 103-130.)

Machinery and the electrical industry. (Angell, pp. 140-157.)

The textiles and chemical industry. (Angell, pp. 157-178.)

Industrial survey; rationalization. (Angell, pp. 179-189.)

Capital and the money market. (Angell, pp. 190-215.)

Cartels, combines, business finance. (Angell, pp. 224-243.)

Foreign trade and the balance of payments. (Angell, pp. 285-305.)

The Young plan and its prospects. (Angell, pp. 333-361.)

Conditions of labor. (Angell, pp. 254-271.)

Labor organization and politics. (Angell, pp. 271-284.)

CHAPTER XX

Germany: Transition to National Socialism

CHRONOLOGICAL SURVEY

<i>Year</i>	<i>External</i>	<i>Internal</i>
1930	Young plan	Outflow of foreign funds
	Hawley-Smoot tariff	Brüning chancellor
1931	Moratorium	Credits frozen; banks closed
	Britain off gold	Standstill agreements
1932	British protective tariff	Brüning falls
1933	Devaluation in United States	Hitler in power (January)

CONDITIONS OF COMMERCE

Germany was in the position of England, a country which did not produce at home the food necessary for the subsistence of the people, and must import supplies from abroad. Like England it paid for its imported food by manufacturing for other countries. Like England, again, it lacked most of the basic materials of manufacture and had to import them. In 1913, 81% of German imports consisted of food and of materials raw or partly manufactured; 66% of the exports consisted of finished manufactures. The export trade in manufactured goods was for Germany as for England a vital matter; the country had taken on the nature of a factory working on foreign orders.

Before the first World War Germany, like England, though in smaller measure, was a creditor country, able every year to import a surplus of goods paid for by interest and dividends due from foreigners, and reinvesting abroad every year considerable sums in forms which helped to extend German commerce and industry. It lost practically all of these foreign investments as a result of the war; it lost the considerable credits formerly provided by its shipping; and, on the other side of the account, it had now to remit the large sums due as reparations. Germany must

now manage in some way to build up its credit items if it was to meet the situation as the Allies had planned. It could accomplish something by restoring its merchant marine to carry freights and passengers for foreigners, but the earnings of shipping would not nearly suffice to balance the account. In the long run the country could meet the charges against it only by building up an export trade in manufactures so large that it would pay for the necessary imports of food and raw materials, and would supply in addition a surplus of profits sufficient to cover reparations.

EXPORT TRADE

Through the period of inflation Germany made no approach to an orderly solution of the problem. With the depreciation of the currency there were spurts of activity in the export trade, embarrassing to countries in which cheap products were dumped, but on the whole the country in this period was living on capital of its own people (including the wage earners) and of other peoples.

	1925	1926	1927	1928	1929
Exports . . .	9.4	10.6	11.0	12.4	13.5
Imports . . .	11.7	9.7	13.8	13.7	13.4
Balance . . .	-2.3	+0.8	-2.8	-1.2	+.04

The period of settlement under the Dawes plan witnessed a recovery in efficiency both in production and in commerce. During the five years 1925-29 there was a year-to-year increase of exports, averaged over the period, of 1,000 million marks (say \$250 million). It was characteristic of the German situation, however, that the country accomplished this result only by an increase of imports which went far to wipe out the gain. The significant figures are given in the preceding table, in rounded milliards (thousand millions) of marks.

OBSTACLES TO EXPORTS

The gains in exports were mainly in the class of finished manufactures, which rose from about two-thirds, the prewar proportion, to nearly three-fourths of the total. Comparing the exports of 1925 and 1929, coal and coke increased slightly, chemical products increased by a third, iron and steel by half, electrical

machinery and equipment by three-fourths, and other machinery nearly doubled. The obstacles to further extension of the German export trade were those which have already been reviewed in considering the postwar condition of England. Other countries had learned during the war to produce for themselves goods which had formerly been imported, and sheltered their growing industries behind protective tariffs; the world as a whole, and particularly Europe, had been impoverished by the war and could not afford to purchase the wares which Germany was prepared to produce. Furthermore, a matter of sentimental rather than of practical importance, Germany had lost by the peace of Versailles all its former colonies, and enjoyed no favors anywhere. These were the external obstacles to expansion. At home Germany suffered from a dearth of capital which made it expensive or impossible to stimulate sales in foreign countries by extending short-time credits or making long-time loans to them. Wages, which had been desperately low during the period of inflation, had reached or passed the pre-1914 standard, and taxes (including the contributions to various forms of social insurance) constituted a burden which every producer had to take into account when he figured the prices at which he could afford to sell his goods.

STRAIN ON CREDIT

The result of all the factors is pictured in the table of exports and imports printed above. Even in its period of recovery under the Dawes plan, Germany, so far from paying reparations out of a surplus of exports, was running deeper into debt. The year 1925 was one of restocking and reconstruction, in which money was borrowed both at short and long term to cover the surplus of imports, and set the industrial organization in order. The strain on credit was greatly relieved in 1926 by the reduction of imports and the increase in exports. This was a year of consolidation, in which a large amount of money at long term was borrowed by the sale of bonds, and a considerable part of the floating commercial debt, a liability always dangerous because its payment could be demanded at any time, was paid off. The next two years, 1927-28, witnessed a reversal of the balance. Exports showed an increase, but the growth of imports was still

larger. Business was expanding and demanded funds for its development; some of the German municipalities were spending somewhat lavishly in improving their public services. The steady gain of exports brought the foreign trade in merchandise into balance again in 1929, and reduced the funds borrowed to an amount actually less than payments remitted for reparations. This was the year in which the Young committee was convoked to amend the reparation terms. Even to those who had been persistently blind to the practical aspects of the reparation problem it had at last become evident that even the Dawes plan demanded too much of Germany in terms of money, gave that country too little power and responsibility in raising and remitting the funds. The nature and results of the Young plan have been briefly described above. The credit and currency crisis which culminated in 1931 made any plan of the kind inoperable.

POSITION OF LABOR

The revolutionary government, which succeeded to power in 1918 after the fall of the Hohenzollerns, was devoted to the interests of the working classes. It passed a flood of popular measures, including various forms of social insurance and relief, and the compulsory 8-hour day. It was lavish in offering employment to the demobilized soldiers in the railroads and in other branches of the public administration. At a time when every incentive to efficiency was needed, piece wages were generally replaced by a time wage. Under the pressure of popular demand the pay of common labor was raised nearly to the level of that of the skilled. Not only as regarded different classes of labor but also as regarded different industries the new theory demanded the abandonment of the principle of payment according to results, and the acceptance of the principle of payment according to need. It was one of the paradoxes of the German situation that under this socialistic government, so generous in its intentions, the working classes declined more rapidly than in any preceding period of history, were rescued from destitution, and were brought back to their former standard by a government rather capitalistic in inclination, devoted above all to business interests. It would be unjust, of course, to refuse to recognize the peculiar difficulties of the situation, and to rate the relative merits of socialism and

capitalism by the particular experiences of the period. The first postwar government, whatever its complexion, was sure to fail in the task of rehabilitation. The failure would not have been so complete and the consequences to the mass of the people would not have been so disastrous if the leaders of the early period had recognized more clearly that the burden of unproductive expenditure always bears heaviest on the class least able to support it, and that of all methods of raising funds the issue of paper money is the most cruelly unjust.

LABOR DURING INFLATION

During the period of inflation the government endeavored to keep track of the rise of prices, and to require adjustment of wages to the added costs of living every month, later every week. Representing the cost of living in 1913 by 100 as par, it had risen, measured in paper marks, at the beginning of 1920 to 573, in January, 1921, to 944, in January, 1922, to 3,779. The years 1922 and 1923 were those in which depreciation proceeded most rapidly, and in which wage earners suffered most; an example was given on an earlier page of the fabulous height to which the cost of living soared, when a laborer might be receiving millions of marks a day and still be starving. By the latter part of 1923 real wages, measured not in marks but in the commodities which marks would buy, had sunk in many cases to a half, a third, or even a quarter of the prewar standard, which was by no means high. A German author expressed the situation by saying that wages had been depressed to the standard of a horse's ration. The Chancellor, when the allies demanded payment late in 1922, said, "Bread first, reparations afterward." It is most extraordinary that in these years from 1919 on the death rate tended to fall rather than to rise, and was in general much below the death rate before the war. One evil of the situation was the irregular adjustment of wages to prices, in different places and in different trades, which reduced some classes below the minimum of subsistence. That this condition did not lead to a higher death rate, whether from actual starvation or from weakened power of resistance to disease, must be taken as evidence both of individual vitality and of efficiency in maintaining sanitary conditions and in administering social relief.

WAGES

Average wages were estimated, early in the period of stabilization (January, 1924), to be for a skilled worker about two-thirds of the prewar standard, for the unskilled about four-fifths. From that point they rose gradually, in the period of recovery during the operation of the Dawes plan, until they reached or even exceeded the prewar level. Such variable factors as taxes and social benefits make exact comparison with other times and places impossible, but a competent judge (Angell) thought that in 1928 the German working classes had a slightly higher standard of living than they had had in 1913, that their position was inferior to that of the workers in England and in some of the smaller countries, was as good as or better than that of the workers in France, Belgium, and Italy, and much better than that prevailing in eastern Europe. He estimated their real wages to be about half as high as those of workers in the United States. The German working class suffered all through this period from a scarcity of housing; rents kept low by law were but a partial compensation. Improvement in their condition in other respects was attested by a rise over the prewar standard of the per capita consumption of meat, imported fruits, sugar, and tobacco.

LABOR ORGANIZATION

The rise in wages was due in considerable measure to the energetic action of the German trade unions. Late in developing as compared with the English unions, they had grown rapidly in numbers during the period of industrialization before the war, and had developed a highly efficient organization. The postwar period was marked by many strikes and lockouts, incident generally to contests over wages. When the issue could not be settled by a compromise of the interested parties it must be referred to arbitrators acting with the authority of the government and inclined, by reason of the political strength of the socialist party, to favor the side of the workers. In the years after 1928 the question rose, more and more insistently demanding answer, whether wages had not been pushed up too high, whether under the conditions of the time the German workers could earn the wages they were receiving. In Germany as in England the extent of unemployment forced attention to this issue.

UNEMPLOYMENT

The number of unemployed varied greatly in the troubled period after the war. It approached a million early in 1919, sank almost to zero, and rose again to several million as a result of the occupation of the Ruhr. Similar fluctuations marked the succeeding period. Germany did not have a persistent and menacing horde of unemployed until the economic crisis which spread over the world after the autumn of 1929. In 1930 the number of unemployed reached about 5 million; in January, 1932, it exceeded 6 million, and surpassed the aggregate of the unemployed in most of the other European states taken together.

The problem of unemployment was so similar in Germany and in England that it need not again be analyzed in detail. Under conditions as they had been the Germans had raised food from their own land to support themselves for only nine months in the year, and had been used to buy abroad the remainder needed, and raw materials for their industry. If they could not find a foreign market for their manufactured product they faced at best a serious decline in their standard of living. In spite of a fall in the birth rate from over 40 in the 1870's to less than 20 in the 1920's (less than 10 in Berlin), the country faced an increase in the working population of some 400,000 a year, for whom work (and wages!) must be provided. It is characteristic of the difficulty of the German situation in this period that economists looked forward to the years 1933-36 with slightly less concern because in those years babies born during the war would reach the working age, 18, and the addition to the working population would drop by some 100,000 a year.

RISE TO POWER OF HITLER

The German people had never had the political training which would qualify them to operate successfully a democratic parliamentary government. In the years from 1918 to 1933 there were 24 different administrations, of which only 5 lasted longer than a year. The Social Democrats, the largest group, never, except for a few months, had a complete majority in the Reichstag, and so had to govern by alliances with other groups. They relied on the personnel of the old régime to conduct the army, the judi-

ciary and the diplomatic corps, and were restrained by theories and by scruples from any vigorous interference with subversive elements aiming to undermine the constitution. The economic revival, which started after the currency had been stabilized, seemed to offer prospects of a better future, but was itself very unstable, based on loans at a high rate of interest, of which a large proportion were for a short term and were payable abroad. The world depression following 1929 strained credit to the breaking point, and led to a rapid increase in the number of unemployed. The moratorium on the payment of reparations and of the interest on intergovernmental debts, proposed by President Hoover in June, 1931, came too late to save the situation. The French finally agreed (Lausanne, July, 1932) to concessions which practically shelved the question of reparations, but meanwhile a government under Brüning, who proposed active measures against the rising Brown army of Hitler, had fallen, and the elections of July, 1932, gave the Nationalist Socialist (Nazi) party a great lead over the Social Democrats and others. Hitler, the Nazi leader, finally assumed office as chancellor and head of the government in January, 1933, in March was given almost unlimited power for the four-year term which he demanded, and after the death of Hindenburg was chosen president as well as chancellor.

ELEMENTS SUPPORTING THE NATIONAL SOCIALISTS

The reader must seek in other books a political narrative of the rise to absolute power of the Nazi party led by Hitler. This book must concern itself with the economic elements which combined to offer the opportunity for the change.

In brief, the French, in seeking security on their eastern frontier, had succeeded only too well in their effort to crush Germany in economic as well as in military power. A people ruined and hopeless were ready to follow blindly a leader who promised to rescue them, who could make adept appeal to their national pride as well as to their material interests, and who seemed by his ruthless vigor to offer the hope of actual achievement.

The Nazis drew followers from all strata of the population, upper, middle and lower. Great industrialists and Junkers were

willing to finance a movement from which they expected favors in return, and which promised an aggressive foreign policy. The middle class had lost their savings in the inflation. They distrusted on the one side socialists and communists, on the other "big business" which was pushing many of them to the wall. The peasants were burdened with debts, and contrasted the generous promise of the Nazis with the neglect which they felt they had suffered in the past. Even the industrial workers, who had been the mainstay of the socialist régime, offered in the great army of unemployed a source of recruits. The youth, especially of the academic class, contrasted the dynamic energy of the Nazi leaders with the caution and timidity of their predecessors.

DECLINE OF NUMBER OF UNEMPLOYED

When Hitler assumed the government over 6 million unemployed had registered at the public offices, and to these should be added a great group of "invisible" unemployed, perhaps another million, who in despair had ceased to report. Funds for relief had run so low that no relief was given for a period of three months after the worker had lost his job, on the theory that his savings would carry him over the interval, and then relief was extended only in small and diminishing measure.

A plank in the Nazi platform bound the state to offer to its citizens the opportunity to make their living by labor, while it balanced this right by the duty of all to work for the common good. Hitler attacked the problem with extraordinary vigor and success. In a little over two years (to July, 1935), the number at work (German figures including both those in public and in private undertakings) rose from 11.5 to 16.5 million, the number still seeking work shrank to less than 2 million.

NAZI POLICY REGARDING UNEMPLOYMENT

{ In contrast to the policy of the New Deal in the United States, which sought at the same time to reduce unemployment and to raise the standard of the laborer, the Nazi policy was to put people to work on any terms. It aimed primarily at increase in production, and let improvement in the condition of the consumer depend on that. Those who were employed in relief work, or in

the labor camps and labor service designed to train growing youth, were given little more than bare subsistence. The minimum hourly wage, set by the government for different classes of labor in manufacture, was actually lower in 1937 than it had been in 1932. The usual rate was higher, but still was very low in 1932, in the depth of the depression. The government adopted the depression rates as standard, administering their application by a quasi-public organization, the Labor Front; it sought to raise the number of the employed rather than the rate at which they were paid. So in some industries it required a spreading of work, which diminished the earnings of those previously employed on full time, but brought on to the pay roll many who before had looked to the state for relief. In more active industries it allowed a rise in the wage rate, if this promised a corresponding increase in product, but set its face against competitive bidding for labor in any line in which it happened to be scarce. In agriculture it subsidized farmers to employ laborers previously idle and on relief; the drain on public funds need not be as great, and there would be added product to show for it. The government offered tax exemptions to those who would take more persons into their employ, and tempted young women to leave their positions open to occupancy by men, by a bonus offered for their retirement in marriage.

GROWTH OF NATIONAL INCOME

Estimates of national income are at best only approaches to reality. The probable error involved increases when there is a chance of bias in the figures. There is obviously the chance of such a bias in German estimates of the country's income under Nazi rule. While in general the government could not afford to falsify the statistics on which it must depend to guide its policy, it might choose to make its income estimates instruments of political propaganda rather than bases of sound information. So the skeptical will regard with some suspicion—probably with more suspicion than they deserve—the following figures.* Ex-

* Guillebaud, a competent scholar who worked on the German figures, reached the conclusion that they were as accurate as those of any other country, that the government refrained from publishing facts which it desired to conceal, but did not falsify them—much the same conclusion that other scholars reached with respect to Russian statistics.

pressed in marks per capita, in the purchasing power of 1928, the income of the individual was in 1928-29 just about what it had been in 1913, before the first World War. From 1929 to 1932 there was a drop of one-third. From the low point in 1932, 875 marks per capita (say \$208 at the then rate of exchange), the figures showed a constant rise, year after year. The average income rose from 875 in 1932 to 1,268 in 1937, a gain of some 45%.

Danger lies not so much in a possible exaggeration of the figures, as in the inference from them. Highly misleading, if taken as an index of prosperity, they give a fair measure of effort, of the work which the Germans of this period were doing. Other evidence would show that in this sense they are not subject to any considerable discount. The fruit of German labor, however, took a peculiar shape, as will appear.

ACCUMULATION OF CAPITAL

In a speech made early in 1933 Hitler announced the principle: "It is not capital which creates work, but work which creates capital." The facts seemed to support the latter part of his proposition. The proportion of the national income used for the construction and maintenance of capital goods had been in the last of the boom years, 1928-29, 18% and 17%. In 1933 the figure dropped to 11%. From that point it rose rapidly and steadily until in 1938 it reached 24.7%, almost a quarter of the greatly increased national income. Of the total industrial output less than half was devoted to capital in 1932-33, nearly two-thirds in 1937-38.

Some of these figures are open to criticism on technical grounds. That is relatively unimportant. Highly important is an understanding of the term "capital" as employed here. It included all goods in the nature of an investment from savings, whether destined to consumption (dwelling, stock), or to production (machinery, factories), or—here is the point—to destruction. More and more as time went on the "capital" created took the form of fortifications, airplanes, guns, tanks, and similar instruments of war.

One thing is apparent in the statistics, which can safely be accepted, as it is confirmed by plenty of other evidence—the ex-

tent to which the Germans were devoting themselves, more and more as time went on, not to enjoyment of the present but to preparation for the future. As a measure of "abstinence," using the term which Nassau Senior made famous, the figures are fairly trustworthy.

PUBLIC WORKS

Public works employed labor in many different lines. Waste land was reclaimed by dykes, ditches and drains. Great buildings were erected for the offices of the government and of the Nazi party. Something, although not enough, was done to remedy shortage in housing; and the living quarters of agricultural laborers, long recognized as a deterrent to life in the country, were improved. A grandiose plan for a network of motor highways to cover all Germany was published. These *Autobahnen* were to be hard-surfaced, with double lanes on either side of a separating strip, free from grade crossings; they were to serve both economic and military purposes. At the end of 1938 some 1,900 miles had been opened to traffic, and over 800 miles were under construction. An immense factory was started to manufacture a "people's car," to be turned out in such quantity and by such advanced methods that it could be sold for 1,000 marks (say \$400). People were invited to subscribe and save in advance for cars of which delivery would begin in 1940, but the response was disappointing; the scale of net incomes in Germany was so low that relatively few could afford to own and operate an automobile. In the improvement of transportation facilities railroads, as appeared later, were somewhat neglected, probably because the renewal of the rolling stock imposed demands on industries which were already overburdened. Canal building was not subject to that objection, and in 1938 the great Midland Canal, connecting Berlin with the Rhine, was opened to traffic. It was constructed to take barges of 1,000 metric tons dead-weight, carrying the equivalent of a full freight train. The factory for the people's car was placed on this canal, and another canal was designed to feed into it traffic (estimated at 14 million tons) with the Hermann Goering Works, established to utilize Germany's low-grade iron ores and so reduce its dependence on foreign sources of supply.

Along with these investments, in greater measure as time passed, went the construction of military works and the preparation of military equipment.

FOREIGN DEBTS AND THE GOLD STANDARD

Unemployment was only one of the great problems which the German government had to face. Closely connected with it was, another, equally pressing and important, namely, the problem of Germany's financial and commercial relations with the outside world.

The working capital of the country had been lost in the inflation, and had been restored, on a very insecure basis, by loans placed abroad. The failure of the Austrian Credit Anstalt (May, 1931) brought down the house of cards. Hoover's proposal of a moratorium (June) in its outcome hurt rather than helped the situation, since the French, by their delay in accepting its terms, intensified distrust in Germany's capacity to pay. The strain on credit led (July) to the closing of all the German banks, and to government control of the foreign exchanges to stop the flight of capital, and (September) to the first of a series of "standstill agreements," reducing payments to foreign creditors.

When Britain (September, 1931) abandoned the gold standard and allowed the pound sterling to sink to two-thirds of its former value, it forced on Germany a momentous decision. If that country clung to the established value of the mark it would need to ask for its exports a considerably higher price in the foreign currencies of British and of other countries which had devalued their units, and would put its export trade at a serious disadvantage. Costs of the German manufacturer had not changed, but sales abroad at the old prices would yield only two-thirds as many marks to meet the costs. This is, of course, a bare suggestion of the nature of the situation. It is not necessary to discuss here the economic detail, because political considerations really bound the hands of the government and forced it to maintain the mark unchanged. The people had had a bitter experience with inflation and would certainly have overthrown a government which appeared to threaten a return to it.

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CONTROL OF FOREIGN TRADE AND EXCHANGE

Although the standstill agreements on commercial loans and similar arrangements made with foreign bondholders in 1933 reduced the demand for means of payment to the outside world they did not remove it. Germany continued to pay its foreign creditors, at reduced rates, through the period down to the second World War.) The country must in addition provide means to purchase food to supply its deficiencies and raw materials to support its manufactures. If foreign trade were left to the free action of individuals not only could they, by the manipulation of invoices, manage to export capital for their private benefit, but also they might involve the country in current commercial indebtedness beyond its capacity to pay. The gold reserve to support the mark was perilously small. Little by little the government found itself forced further in regulation, until in 1934 it had taken complete control of foreign exchange and foreign trade. Every single transaction required official permission, granted only after its nature had been studied by experts in a government department and approved as in the general interest. Imports were allowed only when foreign exchange could be allocated to cover them, of goods deemed essential, on terms approved, when practicable from countries offering some favor in return. Every export was subject to similar restrictions, to impound the foreign credit arising, and to subject to scrutiny the nature of the ware, the terms and the destination. Russia had previously made foreign trade a government monopoly, but no great country has ever administered its external economic relations with such painstaking care, or made of them so consciously and effectively an instrument of national policy.

REASONS FOR THE NEW PLAN IN COMMERCE

Schacht's "New Plan" of 1934, of which the nature is sketched above, must be, of course, abhorrent to any follower of classical economics. It appeared to abandon all the economic wisdom which the world had acquired since the days of Adam Smith. It thrust into the background the guidance of commercial relations by merchants who knew their business, and substituted for it control by a bureaucracy. Friction and waste were inevitable.

At least, it worked. The balance of trade, unfavorable in 1934, turned in Germany's favor for the three following years. And under the conditions of the time it is hard to believe that any plan of the "liberal" economist would have saved the situation. The flow of German exports was blocked by tariffs, quota restrictions and the like. There was no time to wait for a gradual readjustment to these conditions, by shifts in occupation, by lowering wages, by technical improvements. There was no capital to bridge the period of waiting and to pay for the improvements.

Conceivably an autocrat, firmly established in power, might have engineered these changes by methods which Hitler actually followed, making the people by their labor provide their own capital. Even an autocrat could not insure the people against the resistance of other countries to cheap German exports, by tariffs still higher than the Hawley-Smoot Act, by quotas still more restrictive. This policy would have left Germany dependent still on the good will of other countries. There was in it nothing to appeal to the imagination, nothing to promise ultimate independence. Not even Hitler could have won the followers to carry out this plan. If he had essayed it he would have lost his hold, and his administration would have been merely one more in the sorry series of those which had tried and failed to solve the German problem.

What Hitler did was to put the German organization again in bankruptcy, as the allies had done after the war. This time he made himself, the all-powerful Leader, the receiver. The people would submit to his strong-arm methods at home if he could make them believe that by similar methods in foreign affairs he could rescue them from their dependence.

BLOCKED MARKS

How did Germany manage to maintain its exports, in spite of the apparent handicap of a currency still kept at the former par in gold? The answer is that the government, while keeping the Reichsmark at its old level at home—and this in spite of a very small gold reserve—managed to deal with foreign countries as though its currency were depreciated. It appeared to be eating its cake and having it too. It created several varieties of "blocked" marks, which could be used only for some purpose helpful to the

maintenance of the foreign balance, such as travel by foreigners in Germany, or, more important, the purchase by foreigners of German exports. Thus restricted in their use these marks could be purchased abroad at a considerable discount below the gold par, and a foreigner desiring a German export would find that he could afford to pay the price even though his own currency had been devalued. The German exporter, getting his pay in depreciated units, which did not circulate in Germany, looked to the government to compensate him for what would otherwise have been a loss. German business was invited to contribute, in theory voluntarily but practically under compulsion, to a fund which was employed for export subsidies. The amount of this fund and the method of its administration were a government secret, as other countries were inclined to retaliate against a country employing export subsidies, and the United States, for example, struck Germany from the list of countries enjoying preferential treatment; but it is supposed that over a milliard marks a year were spent to subsidize the export trade.

DEVELOPMENT OF BILATERAL TRADE

The situation led Germany more and more to direct its trade to those countries which would take German goods in exchange for their products. Tariff barriers and restrictive import quotas had grown up to such an extent that the government dared not import unless at the same time it assured itself a credit (export) to meet the debit. The world was reverting to the conditions of the mercantilist period in which a country studied with anxious care not only the general balance of its trade, but also its balance in trade with each particular country.

So Germany sought its cotton in Brazil rather than in the United States, its wool in the Argentine or South Africa rather than in Australia. It entered into clearing agreements with other countries which tended to a condition of bilateral barter, and hindered either party of the pair from the unbalanced trade with other countries by which it had previously, in the sum total of transactions, been able to equalize its commercial accounts. By the end of 1938 Germany had clearing agreements, tying exports and imports, with 40 countries, and carried on nearly two-thirds of its trade with them. It had reduced by every means at

its command its trade with those countries which still sold goods only for the "cash" of international transactions, that is, foreign exchange freely at the disposal of the seller. It had still to buy essential raw materials from these countries, of which the United States was the most important, but in 1938 it bought from such countries less than one-sixth of its total imports, and sold to them less than one-tenth of its exports. The spread between these proportions * imposed on Germany, of course, the need of obtaining elsewhere the free foreign exchange to settle the account, and led Germany to discourage purchases from those countries so far as was practicable.

CHANGES IN THE DIRECTION OF TRADE

The conditions led to significant shifts in the direction of German commerce. Trade with industrial countries declined, trade with less advanced countries which would take German industrial products in exchange for their raw materials, increased in importance. In the Americas a sharp drop in trade with the United States was offset by the growth of commerce with countries to the south. In Europe trade with the industrial north-west receded, trade with the countries of the southeast grew greatly in relative amount. The Germany of 1932, before Hitler took command, had already assumed a position of great importance in the commerce of the Balkan countries. The Nazi government made a brutal use of the situation to force these countries into still greater dependence on it. It would threaten to block the marks in which the debts to them had been incurred until they agreed to enter into clearing agreements which forced them to accept their pay in the form of German exports. It paid high prices for their surplus products, it is true, higher than those ruling in the world market, but it charged correspondingly high prices for its own exports, and even forced the weaker countries to accept the exports in the form in which it chose to offer them. "It is common knowledge that in return for good wheat, oil and

* The proportions in the text obviously do not add up to unity. Between the limits of restriction and freedom were other possible arrangements. An analysis of the conditions under which Germany carried on its trade with different countries distinguished five classes and ten subclasses. *Institute for Business Research*, May 23, 1939, Supplement, 4, 54.

tobacco the Germans got rid of train-loads of unwanted aspirin, bird-cages, mouth-organs, microscopes and cameras, which were of very little real value to peasants living on the poverty line on the plains of Rumania or in the Greek mountains. The report that the train-loads of aspirin dispatched to Turkey created more headaches in Istanbul than they cured was less humorous than tragic when it came to reckoning up the effects of Nazi pressure upon Turkey's economic equilibrium" (Francis). A sudden threat to stop the purchase of exports, or to demand the payment of debts in cash, would be used to force agreements tying still tighter the bonds of dependence. Inclusion in "Greater Germany" of former Austria and Czecho-Slovakia completed German dominance of Balkan trade. Grave political as well as economic significance will be found in the figures of the accompanying table which shows the German share in the trade of the countries concerned. Similar figures for Hungary and Turkey, countries more or less outside the Balkan area, but on the southeastern axis of Germany's trade relations, would show the same dependence.

GERMAN SHARE IN TOTAL IMPORTS INTO AND EXPORTS FROM
BALKAN COUNTRIES, %

	<i>Imports to</i>		<i>Exports from</i>	
	1932	1938	1932	1938
Bulgaria	26	58	26	63
Greece	10	32	15	43
Yugoslavia	18	50	11	50
Rumania	24	48	12	36

QUESTIONS

Compare Germany and England with respect to the nature and importance of their foreign trade.

What peculiar difficulties did Germany face in its foreign trade after the first World War?

What was the course of the export trade during inflation; after stabilization?

What industries contributed to expansion; what obstacles did it face? Show the relation between German borrowings and the balance of trade, 1925-29.

In what respects did the government endeavor to improve the condition of labor after 1918? Explain its failure.

Illustrate changes in the cost of living during inflation; the effect on real wages. How can the low death rate be explained?

What was the course of real wages after stabilization? How did the wage level compare with that of other countries?

What influence was exerted by trade unions?

What was the course of unemployment after the war? Indicate its extent in 1932.

Illustrate the weakness, political and economic, of postwar Germany.

What elements in the population supported Hitler in his rise to power?

What success did the Nazi government have in reducing unemployment? How did it accomplish this result?

What was the effect on the national income? on the form that it took?

Illustrate the public works in the unemployment program.

What was the currency problem in the crisis of 1931?

Describe Schacht's New Plan in commerce. State the reasons for it.

Explain "blocked" marks, and the reasons for them.

Explain the tendency to bilateral trade.

What were the effects on the direction of German trade?

What were the effects on the trade of the Balkan countries?

READING

W. F. Bruck, *Social and Economic History of Germany from William II to Hitler* (Cardiff, 1938), covers the whole period 1888-1938, but will be found better for study and reference than for reading. Calvin B. Hoover, *Germany Enters the Third Reich* (N. Y., 1933), gives an excellent account of conditions leading to the establishment of the Nazi regime. C. W. Guillebaud, *The Economic Recovery of Germany* (London, 1939), is a scholarly study of the period 1933-38, and articles in *The Round Table*, Dec., 1938, and by T. Balogh in *The Economic Journal*, Sept., 1938, are likewise substantial and important. V. Trivannovitch, *Economic Development of Germany under National Socialism* (N. Y., 1937), with much statistical material, is one of three small books on German conditions published by the National Industrial Conference Board.

On labor the Brookings Institution offers a good brief survey, L. Hamburger, *How Nazi Germany Has Mobilized and Controlled Labor* (Washington, 1940); on conditions of commerce reference may be made to my *History of Commerce*, revised (N. Y., 1938), and for the difficult subject of clearing agreements to the *Enquiry into Clearing Agreements*, of the League of Nations (Geneva, 1935). Annual publications of the League, *World Economic Survey*, and *Review of World Trade*, are always useful.

Among the many books available, those which I have chosen for topical references, as readable and fairly objective, are, besides Hoover, Heinrich Hauser, *Battle against Time* (N. Y., 1939) and Max Ascoli and A. Feiler, *Fascism for Whom?* (N. Y., 1938). To these might be added C. W. Domville-Fife, *This is Germany* (London, 1939), a sympathetic account written in the interest of appeasement.

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- Background of National Socialism. (Hoover, chaps. 1, 2, pp. 1-31; Feiler, chap. 6, pp. 131-158; Hauser, pp. 28-52.)
- Collapse of Marxian Socialism. (Hoover, chap. 3, pp. 32-49.)
- End of the Weimar republic. (Hoover chap. 4, pp. 50-95.)
- Advent of National Socialism. (Hoover, chap. 5, pp. 96-117.)
- National Socialism in action. (Hoover, chap. 6, pp. 118-151.)
- Principles of National Socialism. (Hoover, chap. 7, pp. 152-184; Feiler, pp. 159-169, chap. 9, pp. 275-307.)
- Economic aspects of National Socialism. (Hoover, chap. 8, pp. 185-209.)
- Campaign against unemployment. (Hauser, chap. 3, pp. 61-96; chaps. 9, 10, pp. 220-245.)
- Motor roads and the people's car. (Hauser, chaps. 9, 10, pp. 220-245.)
- German trade and German debts. (Schacht in *Foreign Affairs*, Oct., 1934, 13:1-6.)
- Germany's experience with clearing agreements. (Ritter in *Foreign Affairs*, Apr., 1936, 14:465-475.)
- Nazi organization of business. (Feiler, pp. 188-203, 225-253.)

CHAPTER XXI

Germany: Rearmament, Autarchy

CHRONOLOGICAL SURVEY

<i>Year</i>	<i>External</i>	<i>Internal</i>
1935	Italy in Abyssinia	Universal military service
1936	Revolution in Spain	Reoccupation of Rhineland Second four-year plan
1937	Japan in China	
1938	Germany in Austria (March) Germany in Sudeten (October)	Construction of Westwall
1939	Germany in Czecho-Slovakia (March) Italy in Albania (April) Germany in Poland (September) Declaration of war by England and France, Sept. 3	

REGULATION OF PRODUCTION AND PRICES

The logic of the situation forced on the Nazi government control not merely of every detail of foreign trade but, further, control of a large part of domestic business. Judgment on the propriety of an export or an import implied acquaintance with the reaction of the transaction on affairs at home, and a decision on the direction in which the government should guide the activities of the people. Germany was in the precarious position of a debtor country, dependent on other countries for the necessities of life. Having once chosen to retain its former price level, based on the gold mark, it must seek by every means to stabilize domestic prices, and allow only such changes in them as were in the national interest. A rise in the level of wages was particularly to be feared. Strange or even repulsive as this may seem, it was rooted in the conditions of the time. A rise in wage rates involved, on one side, an increase in costs and an obstacle to exports, on

the other side an increased purchasing power for consumption goods which would certainly add to the demand for imports. Danger threatened on either side.

But if the wage level could not be allowed to rise too far, neither could it be allowed to decline so far as to rouse social and political discontent. Therefore the price level of consumption goods must be watched and controlled. The extensive program of public works, in the early years of the Nazi rule, was based on credit and did start a rise in the price level. The government interfered, with all the power of an efficient bureaucracy; and a Price Stop Decree, of November, 1936, while not so drastic as the term implies, showed the determination to administer all price changes in the general interest. A student of economics need not be told that a government, if it fixes prices, can hardly determine quantities—or qualities, if quantities remain unchanged. The German government did not accomplish the impossible. It did achieve a measure of success which is really amazing. Its agents kept watch and exercised control at every step in the process of production, from the investment of capital through the supply of raw materials and labor and the determination of costs and prices. It cut the costs of market distribution, and succeeded even to some extent in the most difficult of all aims, guidance of the choices of the consumer.

REGIMENTATION; HARDSHIPS OF THE SMALL ENTERPRISE

In the earliest period of Nazi rule, when unemployment was the outstanding problem, the government required employers to hire more workers, and forbade them to introduce labor-saving machinery. Later, when an actual shortage of labor appeared, it required improvement of equipment, and punished employers who seduced workers from other factories by a covert offer of higher wages. It limited the dividends of corporations, and, in contrast to the policy followed in the United States, encouraged the growth of a surplus of undivided profits, used to expand the activity of the undertaking. The widespread cartels offered it instruments through which to regulate business and determine prices. The government introduced in them uniform systems of accounting, and endeavored to correct their outstand-

ing fault, namely, a price system so rigid as to discourage efficiency

This control of the activities of a great people entailed almost incredible exertions. The Minister of Economics is quoted as saying that the export trade alone raised questions every day regarding thousands of transactions, of which each might require as many as 40 different forms to be filled in. An estimate of half a million people engaged only in filling in forms seems not unreasonable. A manufacturer complained in 1936 that he had had to expand his staff to cope with the clerical work, that he was subject to 240 official and semiofficial authorities, of whom 80 to 100 made "very considerable demands in the way of information, questionnaires, suggestions, advice, laws, and decrees, in part with very drastic penalties for non-compliance." Industrialists had been reduced to the position of subordinate officials of the state.

The Nazi party, as said above, had received active support from the lower middle class, the independent artisans and small shopkeepers, whose position had been undermined by capitalistic development. These had received glowing promises from the Nazi leaders, but found in fact that their condition was still worse under the new regime. Shopkeepers had to submit to sharp reductions, and the craftsmen, although granted a grandiose "charter," soon learned that it was hard to get the ear of a government official for the necessary supply of raw materials, labor or machinery, in competition with big business. They could not afford to employ the experts or the party go-betweens who knew best how to get what was wanted from the bureaucracy. The "little man" had no place in the Nazi scheme, whether employed in trade or handicraft, and little by little he was squeezed out of his independent livelihood. He must find his place in a dependent position in the "big business" of which Hitler was the head.

SECOND FOUR-YEAR PLAN, 1936

{ In less than the four-year term of trial, which Hitler had demanded in 1933, he had accomplished a large part of the program which he had outlined. The number of unemployed, 6 million when he took control, had declined to 2 million in 1935, to 1 million in the fall of 1936; while the number at work (including those employed by the government) had risen from less than 12

to nearly 13 million. In some lines there was already a shortage of labor.

Disarmed by the Treaty of Versailles, Germany had been disappointed in the just expectation that other parties to the treaty would likewise reduce their military establishments. A Disarmament Conference promised no results. In 1935 Hitler withdrew Germany from the League of Nations, and re-introduced universal conscription to build up the German army. At the party assembly in Nuremberg, September, 1936, he announced another and grander four-year plan, which was to make Germany again a great power, as nearly as possible independent of the rest of the world in economic affairs, and so thoroughly equipped for war that it need not fear the outcome of any contest.

REARMAMENT AND AUTARCHY UNDER GOERING

(The dominant motive in the new plan was military.) Every energy was to be bent to rearmament. Equipment of the most modern kind and in ample quantity was to be provided for war on land, on the sea and in the air.¹ To safeguard the nation against blockade it was to be made as nearly as possible self-sufficient in the supply of food and raw materials. Self-sufficiency, "autarchy," promised not merely a military but also an economic advantage. It would protect, it was thought, the German economic system from the business cycles which harassed the world, and which after 1929 had entailed such disastrous results in the fatherland.) The leader promised the people security in peace as well as in war if they would make the necessary sacrifices. They must work to the limit of their capacity and still abstain from enjoying the fruits of their labors. "Guns or butter": they could not have both,* but if they made the guns in the present they could hope to get much more butter in the future.

The administration of this plan was entrusted to Hermann

* Actually, if the official figures are accepted, the consumption of butter increased, although the strict rationing to which it was subjected gave a contrary impression. Consumption of margarine and other substitutes, such as salad and vegetable oils, diminished to some extent; and of course nothing can be predicated regarding quality.

In pounds per capita the consumption was recorded as follows:

	1930	1931	1932	1933	1934	1935	1936	1937	1938
Butter	17.8	17.2	16.5	17.2	17.2	17.2	18.7	19.5	19.3
Margarine, etc.	22.2	23.3	24.9	21.1	19.4	19.4	19.8	17.6	19.1

Goering, an extraordinarily able executive, who was given almost absolute power to direct the activities of the people in production, market distribution and exchange. Himself a former member of the German army, prominent as an aviator in the first World War, he put military officers in the key positions of his administration, and gave military rank to the industrialists who were called in to assist them. While weapons were being provided and men trained for actual fighting, the whole nation was being mobilized, with an efficiency characteristic of the traditions of the Prussian army, to support the aims of the leader.

ACTIVE EMPLOYMENT; RESULTS

Under the new plan there was work for everybody. The number registered as unemployed in May, 1939, was negligible, about 70,000, while vacancies demanding labor were nearly ten-fold that number. The shrinkage in the number of young people growing up to working age, as a result of the decline of the birth rate in the first World War and after it, which had once been foreseen as a relief, was regarded now as a calamity. The construction of the Westwall, the elaborate fortifications on the western frontier, begun in the middle of 1938, added to the pressure as it required the labor of hundreds of thousands. The insistent demand for labor drafted into activity old and young, females and dependents previously occupied only at home, and those who had retired on pensions. The term of apprenticeship in industry was cut by a year. The serious deficiency in the number of graduates qualified in engineering and medicine was met by a reduction of two semesters in their course at the universities. Foreign laborers by the hundred thousand were imported from abroad, and more would have been brought in if it had not been necessary to conserve the foreign exchange in which they took home their earnings.

The results attained by the Nazi government in its efforts to rescue the German productive organization from its depression, and then to accelerate the pace of recovery, are indicated in the accompanying table. Figures give the volume of production in a percentage compared with the base year, 1928, as 100.* The

* The year starts with Jan. 30 of the date indicated, and includes the first month of the succeeding year. Figures for 1938-39 were based in part on estimates.

years chosen for illustration are the last year preceding the Nazi rise to power, the year 1936 closing the first four-year period and beginning the second, and the year before the outbreak of war.

	<i>Manufacture</i>	<i>Agriculture</i>
1928	100	100
1932	58	106
1936	108	112
1938	126	115

NAZI POLICY TOWARD AGRICULTURE

The condition of agriculture appeared almost desperate when Hitler assumed power. Returns to producers had dropped from 10 milliard marks in 1928 to less than 7 in 1932. Interest on debts absorbed a considerable proportion of the reduced income. In the years 1930-32 farm owners had lost over a million acres by forced sale, and prospects threatened bankruptcy on a much larger area. The large estates lacked money to pay their laborers; mobs gathered to prevent the expropriation of peasant holdings.

The National Socialist government illustrated the principles both of nationalism and of socialism in attacking the problem. In the nationalist aspect it must preserve its rural population from ruin, and make them competent to supply the country's needs without dependence on the outside world. In the socialist aspect it denounced the private loan contracts, and drastically reduced the sums to be paid in interest. Further, it proposed to free the farmer from the dangers of the competitive market, which he was so ill prepared to meet. It assumed the power of fixing prices, "just prices" to compensate the producer under varying conditions, adequate to assure the needed supply yet not so high as to oppress the consumer. It actually succeeded in raising very considerably the returns to the producers at the cost of but a slight increase in retail prices. /

To accomplish its aim the government established the *Reichsnährstand*, National Food Estate, a tremendous organization since all were members in it who were concerned in the production or distribution of agricultural products. They were no longer private persons but quasi-public officials, owing service to the state which directed their activities. In a modern form some of the feudal principles were realized. The whole organization was

integrated on lines both vertical and horizontal, tying together on one line all through whose hands a good passed to the consumer, on another those active in each stage of the process, the grain millers for example.

If the increased output, represented by figures in the table above, seems modest, particularly when compared with the growth of population, the reader must recognize the difficulty of dealing with millions of scattered producers, set in their ways not only by natural conservatism but also by the particular form of the land and capital of each of them.

PROBLEMS OF LAND TENURE

One bad feature of the German conditions was the persistence, east of the Elbe, of the great estates. A quarter of the land of the country (arable and forest) was in the hands of less than 1% of the owners. A few hundred people in the east held as much land as a million in the southwest.

The great estates had never been intensively cultivated, and became less efficient as their labor force dwindled. Every year more than 100,000 agricultural workers were leaving the country for the towns. The government planned to make rural life more attractive by improvement of the housing and other conditions, but found itself forced to more direct regulation, and finally tied the workers again to the soil, as they had been tied in the manorial period. Even so, in the sowing season of 1939, it had not only to enlist the services of male and female members of its various training corps, but also to recall workers from industry and from the army, and to import laborers from abroad.

The Nazi government realized that the great estates were a flaw in the agricultural organization, and abolished the system of entails by which many of them were held together, but made relatively little progress in the difficult task of cutting them up into more efficient units.

At the other end of the scale of landowners, classed according to the size of their holdings, were the small proprietors. Half of the land under cultivation was held in farms of less than 50 acres. Suitable as were these small holdings for some purposes, vineyards for example, they were obviously too small for mechanized cultivation. The lower limit of area for the profitable employment of

a tractor was estimated at 125 acres. To increase efficiency some did not hesitate to demand procedure on the line of Russian Soviet policy. The medieval *Flurzwang*, compulsory alternation of crops, was to be introduced again, but the land of the village, instead of being worked in little strips by individuals, was to be pooled and cultivated in large blocks by the owners in common. In spite of the obvious weakness of the smaller holdings, of which many were still composed of fragments, the Nazi government preferred to follow a plan in which social and political considerations were emphasized, even at the expense of economic efficiency.

ESTABLISHMENT OF THE HEREDITARY FARM

The symbol of *Blut und Boden*, "Blood and Soil," expressed a mystical idea of a vital connection between the German "race" and the land on which it lived. To treat the land like a bare commodity, to be bought and sold in the market, was abhorrent; the land was a part of the life of the people who owned and actually worked it. Land and people had grown together and must be kept together. So the government, while it abolished entail on the large estates, which had been used only for profit, introduced it on the peasant holdings, where blood and soil were connected and must not be separated.

A law of 1933 established all holdings capable of supporting a family as *Erbhöfe*, hereditary farms. The lower limit in size was not fixed; obviously the minimum would vary greatly according to conditions. The maximum must not exceed 310 acres. In 1938, 685,000 of these farms had been established, comprising nearly nine-tenths of the agricultural land below the upper limit. A quarter of them ranged in size from 25 to 37 acres, a half from 37 to 123 acres, the rest were smaller or larger than the limits indicated.

CONDITIONS AND CRITICISM OF THE HEREDITARY FARM

An *Erbhof* must pass, with the necessary working capital, to a single heir. He might be, according to provincial custom, the eldest or the youngest. He alone might bear the title *Bauer*, peasant, designed now to be a term of distinction; the minor heirs were given some subordinate privileges, but might not en-

croach on his position. The heir must be mentally and technically competent, must be of German or "equal" race, and must prove no mixture of Jewish or colored blood since 1800. To ensure the position of succeeding generations of heirs the land might not be leased, sold, mortgaged or seized for existing debt.

This law initiated a great social experiment. Germany had long been worried about the future of its peasants. With the growth of population so keenly desired for military reasons, the peasant farm in the past faced alternatives equally undesirable. Either it had been divided and cut into uneconomic fragments, too small for the decent support of a family, or it had been burdened with debt if it remained in the possession of a single holder, who must buy out the rights of other heirs. The new law appeared to assure the stability of the peasant class.

Whether social stability was not obtained at too great an economic cost was left for the years to determine. The peasant could no longer offer his land as security for a loan, and must obtain any needed capital either by his own savings or by borrowing on personal security. The law not only restricted the operation of the farm; it prevented any competition for its control. The land must remain under the management of a person determined by the accident of birth. The classical theory, that the most efficient combination of land, labor and capital would result from the competition of risk-taking entrepreneurs, was excluded from consideration.

ATTEMPT TO REACH SELF-SUFFICIENCY IN AGRICULTURE

Economic factors again were thrust into the background by the military demand for self-sufficiency, intensified by the four-year plan of 1936. In 1932 the country supplied only 75% of the agricultural products consumed, and had to find foreign exchange to pay for imports covering the deficit. It lacked particularly the textile fibers, importing all of its cotton and most of its wool, flax and hemp. It could rely on home production for the most important part of its food supply, but lacked forage for its animals, and needed fats obtained from them or from vegetable oils.

An energetic government had succeeded, in 1938, in raising the percentage of agricultural self-sufficiency from 75 to 83. In food

supply the percentage was still higher, estimated at 87 in 1939. The government lowered the price of artificial fertilizers, and taught the producers how to use them most effectively. It used its control of prices to switch people from rye to sugar beets and potatoes, yielding a much higher content in calories. It stimulated the establishment of silos, dairies and canneries. It reclaimed over 700,000 acres of waste land, and improved 1,500,000 more; but it took with one hand what it gave with the other, for it required some 500,000 acres of agricultural land for fortifications and other military purposes, for the new automobile roads, and for factories.

An account will be given later of the efforts to substitute synthetic products for such raw materials as rubber and the textile fibers. "The battle of production," as it was termed, promised an adequate if not a generous supply of home-grown food except as to fats. Of them the domestic supply was 48% of the consumption in 1933, still only 56% in 1938. The deficiency was met by the import of oil seeds and of whale oil for margarine. Rationing and occasional shortages gave foreigners an exaggerated idea of the pressure on the people. Compared with the people of better endowed countries the Germans were not getting so much of the particular foods they wanted, but they were getting more than they had had in the not far distant past and enough to sustain their vigor. The effect of a blockade was still to be proved.

EXPANSION OF MANUFACTURE

The brief table on a preceding page shows that the Nazi government, in its efforts to expand the volume of production, was far more successful in manufacture than in agriculture. Its pressure on one branch was no greater than on the other, but the resistance to expansion was far less in manufacture than in an extractive industry subject to the law of the diminishing return. It doubled, and more than doubled, 1932-38, the volume of manufactured goods. It tripled, roughly, the output in such significant items as iron and steel and machinery. This amazing advance in a few years, while the industry, particularly the heavy industry, of other countries was relatively stagnant, supported the claim of German statisticians that the country's share of the world's industrial product had risen, 1932-39, from 8 to 13%, to 15% if former Austria and Czecho-Slovakia were included. Germany

had certainly passed Britain and all other competitors except the United States as an industrial power.

It accomplished this result under a heavy handicap. Even manufacture was dependent on extractive industry for its raw materials. Of these Germany lacked many, indeed most, of good quality and in sufficient quantity; and had been used to purchase them from abroad. One indeed, and that the most important, it had in abundance, coal. By a lavish use of coal and lignite, not merely as a source of energy but as itself a raw material for the chemists, it must seek to atone for the lack of others, so preserving its precious foreign exchange in time of peace, and aiming at autarchy in case of war.

LACK OF MINERAL RESOURCES

Besides coal potash was the only mineral of which Germany had an abundant supply; this was helpful particularly in agriculture. Of metallic ores it had a variety and in earlier centuries, indeed, had been prominent in mining and metallurgy. In the machine age it found them (except for magnesite, ore of magnesium) deficient in quantity or in quality to meet the greatly increased demand.

With respect to iron ore, the leading item in the list, it had suffered a severe loss when the minette deposits of Lorraine were given back to France, and in 1938 imported nearly twice as much as it mined at home. It was building up a reserve at this time, it is true, and was already preparing the great Hermann Goering works to utilize the ores of central Germany. These ores, however, were poor in iron content (25 to 35%, compared with 60% in the imported), and contained so much sulphur and silicon as to require a special and costly process for reduction. Good ore gained in the Styrian Erzberg when Austria was incorporated in the Reich was ill placed for transportation, and Germany entered the war in 1939, still dependent on foreign supplies to meet its needs.

With respect to other metals its position was still worse. The government gave lavish subsidies to stimulate the working of the old copper mines, but still relied on foreign sources to supply most (nearly seven-eighths) of the demand. Zinc, the other component of brass, could be and was mined in Germany, in suffi-

cient quantity, but only under the stimulus of a subsidy. Practically all of the bauxite, the ore of aluminum, was imported, particularly from Yugoslavia. Germany claimed (1939) world leadership in the production of aluminum, but to free itself from dependence on foreign bauxite developed the production of another light metal, magnesium, used successfully as an alloy in airplanes and motor cars.

MANUFACTURE OF SUBSTITUTE MATERIALS

Ranking in importance with iron, as a military requisite in the machine age, was petroleum. The product of domestic oil wells, supplemented by synthetic fuels, hydrogenated coal and other contributions of the chemist, did not meet half of the demand even in time of peace. A mechanized military force in action would increase the demand to an enormous extent. The problem of autarchy in this regard was still unsolved when Germany entered the war.

The chemists were called upon again to supply by organic synthesis other products of which the supply was deficient. Their attempts to make a substitute for rubber in the war of 1914-18 had not been very successful. Renewed efforts, sustained by liberal subsidies, led to the discovery of processes by which a synthetic rubber, buna, could be made, actually superior to the natural product in its resistance to wear, to heat, and to contact with oil. From coke and lime as raw materials a variety of buna products was made, adapted to different uses. The cost was still far above that of natural rubber, and the supply met only part, perhaps half, of German needs in 1939.

In obtaining domestic substitutes for imported textile fibers the government managed to raise the percentage of the total supply produced at home from less than 6% in 1933 to 26% in 1938. It could look to agriculture, with the other demands on it, for but a small part of the increase, and relied again mainly on the chemists. They manipulated the cellulose of wood to obtain from it substitutes for natural cotton and wool. Opinion differed as to the quality of the product but at least it offered something which would serve in time of need, and the addition of reworked material (shoddy) raised the home output to nearly one-third of the supply.

The chemists got from coal not only such diverse products as gasoline and rubber, but many others, for example a substitute for the usual soap made from natural fat. They drew from the air nitrates for explosives and fertilizers, and concocted from them proteins to be fed to live stock in place of the imported oil cake, and so helped to meet the deficiency in meats and fats.

STRAIN ON PRODUCTIVE CAPACITY

"Haste makes waste." There will be discussion elsewhere in the book of the losses entailed by the determination to produce at home goods which could be produced of better quality and at lower costs in other countries. These losses were inevitable if autarchy were to be established. Added to them were wastes consequent on the hurried pace of preparation. Machines which had formerly been operated with one shift, then with two shifts, were frequently (July, 1939) worked with three shifts of operators, "with only brief pauses, if any, for current repairs and the necessary maintenance work." The strain was felt particularly by the railroads, which had to carry traffic far greater than that of the preceding period with rolling stock actually diminished in amount. The railroads threatened to become the "bottleneck" limiting activity. It is extraordinary that in spite of wastes due to overstrain, and in spite of the dilution of labor by calling less capable hands into service, the volume of industrial production per labor hour remained nearly constant after 1933, and was estimated to have increased 15%, 1928-38.

The Germany of this period was, in a sense, living on its capital. Machines were driven beyond the limit. Wood for cellulose was cut in amount far beyond the natural growth of the forest. Even of human capital the same held true; reduction of the period of educational training provided technicians qualified to serve as subordinates, but not to replace the older men as leaders. Men were strained in operation as were the machines.

Such waste as could be controlled by organized thrift was reduced to a minimum. Every bit of garbage was saved and collected, to be fed to pigs and reappear as food. "Raw material savings boxes" in every household were emptied weekly by a corps of young collectors, and the contents were distributed among the industries that could utilize them. Margins on official correspond-

ence were reduced and matches were shortened a fraction of an inch to conserve the wood supply.

THE LABOR FRONT

One of the tenets of the Nazi doctrine was the duty of every citizen to serve the state as best he could. His self-interest was negligible if it conflicted with what the government determined to be the public interest. Further, all associations representing class interests were to be swept away, leaving the Nazi party in supreme control.

So in regard to labor, all trade unions were dissolved. In place of them, and of the employers' associations, an elaborate organization was established, the Labor Front, combining representatives of employers and employees but submitting both to party control. Questions of work and pay were no longer to be settled by purely private negotiation and agreement, but now were to be controlled by public administration. Resistance could no longer take the form of strikes of which there had been so many in the previous period. Strikes henceforth were like treason to the state, like mutiny in the army. Resistance there inevitably was to this reshaping of industrial society but it could not be overt and organized, and was soon overcome.

Another tenet of the Nazi doctrine was that the laborer should have a position in society according with the importance of his contribution. He was not to be exalted, it is true, as was the peasant, but at least was to be assured a livelihood, and such share in the pleasures of life as conditions warranted. Sternly as the government repressed opposition, strictly as it opposed such a rise of wages as would threaten its plans of rearmament, in spite of hideous abuses which attended its régime in personal and political aspects, it still showed some favor to laborers as a class. If, to an observer used to the easy-going ways of a democratic country, it appeared to have spoiled the joy in life, its organ, "Strength through Joy," did introduce and administer vacations with pay for the working class, and did extend the opportunities for recreation. If, under the conditions, the name of another organ, "Beauty in Work," looked specious, yet it did bring pressure on employers to improve some features of factory life. The critic will contest the propriety of the Nazi policy of rearmament

and autarchy, which left but slight resources for enjoyment. He can point to glaring instances of the abuse of their position by the politically privileged. He must admit something, even if it is little, to be credited to the labor policy of the Nazi government.

REGIMENTATION OF LABOR

On the debit side of the account, from the viewpoint of the laborer, was the complete loss of his industrial freedom. Before the outbreak of war the government had taken control of the whole career of a male laborer—his choice of an occupation, his shifting of residence or employment, the terms on which he worked.)

On leaving school boys were steered into industries most needing development to hasten rearmament and autarchy. They entered as apprentices, and from the start were trained as specialists in a narrow field of activity; time was lacking to give them the broader education which was the ideal of the old apprenticeship system. They served as minute parts of a great machine, their working lives determined by the authorities above them.

A necessary part of the system was the Work Book, introduced in 1935, and in the course of time required of practically all workers, independent as well as dependent, if they were not actually members of the public civil service. The Work Book contained a complete record of the laborer's education and qualifications. It fixed his status in industrial society, and gave to the government the information which it needed to direct him in his career.

Little by little the government tightened its restrictions and regulations. The building of the Westwall in 1938, requiring the service of hundreds of thousands of workers, occasioned a decree authorizing the conscription of German citizens for a limited term of compulsory service. By decrees of February–March, 1939, any inhabitant could be summoned for any work in any place for an unlimited period.

HOURS OF WORK

The Nazi government had accepted the principle of the 8-hour day, the 48-hour week, established as normal under the previous régime. German figures would show a maintenance of this prin-

ciple in general down even to 1939, with an extension of the working hours to 50 and above at times in special industries, such as the metal trades and building. These figures are averages, which can readily be used to mask extremes, and cannot be accepted as a fair picture of conditions.

So early as 1934 an order was issued which permitted employers to extend the working time under conditions laid down, and further authorized the labor trustees, government agents who determined the rules, to establish general extensions, provided that overtime was compensated by time and a quarter rates. The insistent demand for products, coupled with the shortage of labor, had made the 10-hour day usual in some industries by 1936, and Goering's four-year plan of that year added to the pressure. The Minister of Labor, in his report for 1937, noted the lack of labor to carry out the government program; "The competent authorities have therefore been instructed to avoid applying the regulations too strictly, and to take advantage of the facilities provided by law for exceeding hours of work" in the metal industries, in building, and in some other trades. The tendency was all in the direction of longer hours. In March, 1939, Goering extended the working day of the coal miner from 8 to 8¾ hours, but offered a higher rate for the overtime and a bonus for efficiency.

WAGES

As illustrated in the preceding section, wage rates did not remain unchanged under Nazi rule. If the government feared, and with reason, such a sweeping rise in the purchasing power of labor as would upset the delicate balance of its foreign trade, it allowed and indeed itself used the inducement of higher rates and larger earnings to stimulate efficiency and to guide laborers into the production of the goods most needed for rearmament and autarchy. From 1934 to 1937, a period for which statistical comparison is possible, the average weekly earnings of the industrial worker rose nearly 16%. Not all branches of industry shared equally in the increase. In some branches (mechanical, optical, building), the rise was over 20% or even 30%. In the glass industry earnings were unchanged; in the leather and clothing trades they declined. These contrasts were a cause of concern to the government, as a source of social dissatisfaction, and led in

1938 to measures seeking to realize the desired "brake on wages," which would repress the upward movement, except when it appeared necessary in the public interest. The government was reluctant to set maximum wages, and did so only in a few cases, in some actually forcing reductions, but it made any departure from existing wage schedules dependent on its express permission.

STANDARD OF LIVING

Official figures of the earnings of labor compared with the official index of the cost of living would show a considerable rise of real wages and improvement in the position of the laborer during the period of Nazi rule. Corrections must be introduced, however, on both sides of the account. The laborer could not spend freely all the cash which he received; he was subject to new taxes, and to "contributions" which might be voluntary in form but were compulsory in fact. These would reduce his nominal income considerably. On the other side the official index of the cost of living did not give a true picture of conditions. It was based on the cheaper grades of goods and housing, which often were not sufficient in quantity to meet the demand. The purchaser might have to take a better grade than he wanted, might have to take a substitute inferior in quality, or, under the system of "coupled purchases" by which storekeepers got rid of undesirable stock, might have to take something which he did not want to get something which he did.

STATISTICS OF CONSUMPTION

A safer measure of the condition of the people is offered by the statistics of consumption. Here again the figures might show bias, but will be presented as of their face value; a correction cannot be calculated. As regards food they showed the average German had more of essential elements (calories, carbohydrates, proteins, even fats) in 1938 than in 1932. The following table furnishes the opportunity to compare the two years, the earlier one just before accession of the Nazis, the later just before the second war.

The deficiencies do not appear serious in comparison with the gains. The consumption of imported foods, such as rice and southern fruits, was discouraged for the sake of autarchy; 1938 had been a bad year for native fruit. The average German did

not eat so many eggs as in 1932 (the poultry too were not living so well for lack of imports); but he ate considerably more than he had been used to eat in 1913. On the other hand he had more

PER CAPITA CONSUMPTION, 1938, IN PERCENTAGE OF 1932
CONSUMPTION

<i>Declines</i>		<i>Advances</i>	
Rye flour	99	Wheat flour	116
Eggs	90	Meat	114
Lard	99	Fish	140
Margarine, etc.	73	Butter	117
Potatoes	96	Milk	107
Rice	83	Cheese	108
Vegetables	99	Legumes (peas, beans, etc.) . .	115
Native fruit	66	Sugar	120
Southern fruit	88	Coffee	144

bread and meat and fish, and more of the important dairy products. It might be well not to inquire too closely into the quality of his coffee, but at least he had more of it and more sugar to put in it. Of items not included in the table he drank 33% more beer, smoked 40% more cigarettes, 54% more cigars.*

SIGNIFICANCE OF THE STATISTICS

The Nazi government could fairly take for comparison the year 1932, just before Hitler assumed control, but that year was, of course, a year of great depression. Comparing 1938 even with 1929, however, before the depression had proceeded far, the average German was better off in practically every important item of consumption. There was no such shift in the distribution of income as prevents the conclusion, if these figures are accepted, that in some material respects the condition of the mass of the people improved. Friction and delay in purchasing, a deterioration in quality, and a deficiency in housing would appear on the other side of the account, and one more factor, of considerable importance in the comfort of life. The manufacture of consumption goods, such items as clothing and footwear, household furnishings and the like, was repressed in the interest of rearmament and autarchy. Of such goods there was a real dearth; not until 1938 did the production of these goods, measured in volume

* These last three items could certainly not be falsified, since they as well as some others were subject to taxation and bound up in statistics of revenue.

per capita of the consuming population, reach the level of 1928.

To combine these plus and minus items in a single statistical measure of the standard of living is impossible. This, at least, may be said with assurance, granting even some bias in the figures, that the standard was much higher than anyone would expect who counted the economic waste involved in the Nazi policy of rearmament and autarchy. This waste will be the subject of discussion in the next section. In view of it the favorable showing of the present section can be explained only as the result of putting all to work, and making them all work hard under efficient direction.

COST OF REARMAMENT AND AUTARCHY

Rearmament absorbed a vast amount of labor and materials which might else have been expended, either for the immediate benefit of the consumer or for investment in a conventionally "productive" form, to his ultimate benefit.

The effort to achieve autarchy, however desirable from the military viewpoint, preparing the people for a war footing even in time of peace, was obviously attended by grave economic waste. The production in Germany of substitutes for such products as petroleum, rubber and the textile fibers certainly entailed greater costs than would their purchase from abroad by the export of goods in the production of which Germany had a relative advantage. Even that part of the foreign trade which Germany still maintained bound the country by its bilateral agreements to import goods of inferior quality (wool from South Africa, cotton from Brazil) and still to pay a price considerably above that prevailing in the world market.* One estimate put the prices paid for food and raw materials imported from southeastern Europe at 20 to 40% above the world level.

The further the country went in the policies of rearmament and autarchy the more definitely it was committed to war as the only means to realize on the investments it had made. The

* Prices of raw cotton imported in 1938, determined not so much by any difference in quality as by cost of production in the particular country, ranged as follows (gold marks, rounded, per 100 kilos) · U.S. 70, Brazil 77, Turkey 88, Peru 95. The differences represented premiums paid by Germany to get outlets for exports. *Vierteljahrshefte zur Wirtschaftsforschung*, 1939-40, 59.

further it went the more strains accumulated in the system—financial, economic, psychological—and the nearer it brought war as the natural means of relief. The further it went, whatever the outcome of the war, the more difficult became readaptation to a world of peace.

QUESTIONS

Trace the effect of Germany's position as a debtor country in its policy as regards exports and imports.

Why did it fear a rise in wages?

How was it forced to regulate all economic activities?

Contrast the policy with that of the New Deal in the United States.

How did the small business man fare under the conditions?

What justification did Germany have for rearmament?

What were the arguments for self-sufficiency?

What were the results in manufacture and in agriculture?

What were the conditions in agriculture, and the policy pursued?

What were the faults of the old agricultural system?

What was the idea of "hereditary farms", what were the arguments for and against?

How far did Germany go toward attaining self-sufficiency in agriculture?

How far did it go in stimulating manufacture?

What were the major difficulties in manufacture, and how were they met?

Illustrate the strain on productive capacity.

What were the Nazi principles as regards labor, and how were they applied?

What were good and bad sides of the policy?

What was the effect on hours of labor; on wages?

Why it is difficult to determine the standard of living?

What inference can be drawn from statistics of consumption?

What inevitable costs and dangers were involved in the system?

READING

For references see preceding chapter.

Hermann Goering. (Hauser, chap. 6, pp. 154-171.)

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Social results. (Feiler, pp. 253-274.)

CHAPTER XXII

Russia before and after Emancipation

PHYSICAL

One of the czars is reported to have said that beside the five continents there was a sixth part of the world, peculiar to itself, Russia. Even as regards area the remark is almost literally true; the Russian state covers a surface greater than that presented by the moon at the full. In character, moreover, it is individual; it combines the features of Europe and of Asia so as to deserve the descriptive adjective Eurasian. The Ural Mountains, rounded ridges, forest-clad and reaching to no great height, make no sharp boundary. European Russian is less European than Asiatic in physical characteristics. In contrast to the piecemeal structure, the indented coast line and the maritime climate of the west, Russia in Europe is a vast continental block, almost flat, with the sharp extremes in heat and cold of a continental climate.

Northern Russia is a land of forests, where snow lies a large part of the year, and where even such hardy cereals as rye and barley are grown with difficulty. Southern Russia is a treeless plain, with a rainfall scanty and irregular, shading off into steppe and desert. "From the economist's viewpoint Russia is a natural tragedy." The judgment is justified mainly by reference to the climate. Even in the agricultural regions between the extremes of north and south, in the regions where the great majority of the people live, the cultivator has a growing period of only three to five months, suffers temperature differences of over 100° Fahrenheit, faces always the dangers of drought, of night frosts, or of hot winds and dust storms.

The population of Russia, very sparse in the north and in the south, is crowded into this intermediate region, where the cultivators are settled in a density comparable to that of western Europe. Between the forests and the steppes lies the band of the "Black

Earth," stretching from southwest to northeast (roughly, Kiev to Kazan). The soil here is a blackish humus, for a foot and a half to four or five feet in depth, readily absorbing water and the sun's heat, rich in phosphate, potash, and especially rich in organic matter. The result of the decomposition for uncounted centuries of the prairie grasses, the soil resembles in fertility that found in some parts of the United States, and needs only adequate rainfall and good cultivation to return a bountiful harvest.

PEOPLES

The north and the south of Russia are linked together by great rivers, and supplement each other's needs; the north requires the food supply of the south and the south requires the lumber of the north. Thus destined by nature to economic unity, the lack of internal partitions has made also inevitable the growth here of a single great political unit. Yet the problem of organizing an effective government is almost infinitely difficult, not only because of the great area involved but also because of the variety of peoples contained within it. The census of 1897 distinguished in the whole empire some two score nationalities, without any pretense to making the classification complete; it would be easy to make a list of half as many in European Russia alone. Open on the east to Asia, in the pathway of migrations to the west, Russia was bound to harbor representatives of many varied peoples, both European and Asiatic. Even the Slavs themselves, speaking a language distantly related to the Teutonic and distinctly members of the European family, were split into parts, which are recognized in modern geography by the distinction of Great Russia (Moscow), Little Russia (Kiev), White Russia (Minsk, Dvinsk, Pinsk, etc.).

HISTORY

Russia celebrated in 1862 the thousandth anniversary of its establishment. Without taking too seriously the exact date, we may believe the story that about 900 A.D. a band of the Scandinavian adventurers who were making history all over Europe in that period started in what is now western Russia (Novgorod, Kiev) the crystallization of Slavic tribes in some approach to political organization. In the later history of these Slavs there are

a few elements of outstanding importance to one who would understand contemporary Russia.

The first appears in the conversion of the Slavs to Christianity about 1000. According to an old chronicle the heathen ruler was approached by representatives of Mohammedans, Jews, the Catholic Christians of the Roman west, and the "orthodox" Christians of the east, who had built up a separate creed and church at Byzantium (Constantinople). The Slavs had traded with Byzantium, down the Dnieper through the Black Sea, and chose to accept their religion from that source. Even now the Russians use in writing and printing the characters of the Greek, not the Roman alphabet. That difference is a superficial sign of a far-reaching contrast; the Russian Slavs from then on had their backs turned to western Europe, and had no share in the development of Catholic civilization.

MONGOL RULE

A second element of importance appears in the conquest (1240) of the Russian Slavs by a Mongol successor of the "Heavenly Emperor" Genghis Khan. For centuries the Slavs were more or less subject to the Khans of the Golden Horde, who established the seat of their power on the lower Volga. While before they had faced southeast to Christian Byzantium, they must now face directly east to an Asiatic, non-Christian people. In a negative way they were again given a twist which kept them from touch with western civilization. There were further some positive changes which resulted from the situation. Under the rule of the alien they clung with the greater tenacity to that which distinguished them from him, their orthodox faith and their native princes. The Greek cross became the symbol of Holy Russia; the people were made ready for that absolute subjection to church and ruler which marked the later period. Genghis Khan prepared the way for Ivan the Terrible, that czar of a later century who with ruthless ferocity quelled all opposition and built up the autocratic state. The Russians showed in their succeeding history more persistence, more continuity of thought and action and less mobility than other Slavic peoples; the discipline which they suffered under Asiatic rulers contributed to this result.

The country which we now call Russia was known to the Eng-

lish of the Elizabethan period as Muscovy. Moscow was the center in which the forces of opposition to the Asiatic rulers developed; the princes of Moscow, acting first as tax collectors and agents for the foreigner, won their independence and rapidly extended their power. Great Russia, centering about Moscow, was built up by a process of colonization; a whole people spread out to occupy the vacant territory and lay the foundations of modern Russia.

PETER THE GREAT

Before 1700 Russia might still be regarded as an Asiatic country. When an ambassador from Muscovy was received in France in 1668, a medal was struck to commemorate the event, as was done when an ambassador came from Siam. A single man changed the whole situation. Peter the Great, with the energy of a hero, the ability of a genius, and the rudeness of a barbarian, forced Russia abruptly to turn about face, to look west instead of east. By the founding of St. Petersburg (1703) he opened his "window on Europe." On his travels he acquired with an insatiable curiosity what other peoples could teach him of the trades of war and peace; he imposed western institutions, wholesale, on his backward Slavic people. All that a single man could do to make Russia modern and European he did. But no man can hurry a great people in a few years over a gap of centuries, and down to the present day Russia has still been trying to catch up, to assimilate the foreign institutions of the west, and to combine them in a consistent whole with native institutions of a very different order of development. The process has lasted over two centuries and still is unfinished.

RISE OF SERFDOM

At the very time when Peter was trying to make Russia modern the country was actually crystallizing in a medieval structure marked by the serfdom of the great mass of the people. In an early period there were many outright slaves, but the common people were still personally free. The cultivators of the soil, however, were distinctly inferior to the men of war; they were called "little," "half," "black (dirty)" men. Their position in periods

of anarchy and war was precarious; they had to seek protection where they could, and to pay for it by surrendering some of their rights. The princes needed taxes and the help of warriors, and got them by granting the military class rights over land and persons. The princes of Muscovy, in the great period of colonization, found their position menaced by the rich nobles, who used their power to attract cultivators from the land of others, even to kidnap them by regularly organized forays with armed bands. The government, to assure itself taxes and the military assistance of the common nobles, interfered to protect them from being drained of their help. A series of enactments tied the cultivators to the land on which they were settled, made them "ascript" to the soil, to use the medieval phrase. The process of ascription was gradual and uneven, but about 1600 it had gone so far that the common people had lost the most evident mark of freedom, the right to move about as they pleased. Slaves and free were being merged in one common class, serfs of the soil. For a time the cultivator might retain his civil rights to make contracts and to appear as accuser or defendant in the public courts. The force of the situation was against him. Tied to the land, paying taxes through his lord, often hopelessly in debt to him, abandoned by the government which sought only the favor of the lord, the common man was helpless. Peter the Great completed the process. To obtain revenue he imposed a poll tax on all the common people alike, whether in form they were slave, serf, or free; he merged them in a single class inscribed in a census register. The tax was collected not from individuals but from the landlord on private estates or from the village community on land which had not been ceded by the government to individuals. In either case the serf was bound to the soil.

SERFDOM ABOUT 1800 ✓

After the middle of the eighteenth century it is estimated that seven-ninths of the Russian people were in bondage, of whom more than half were serfs of a private lord, and the remainder were serfs of the crown or of some member of the imperial family. Conditions became constantly more severe. Russian serfs before 1800 were distinctly worse off than the serfs of medieval western Europe who had at least the opportunity to flee for refuge to the

towns, and whose dues were limited by custom if not by law. The lord imposed such duties and such dues as he pleased, judged without appeal, inflicted any punishment short of death, could exile to Siberia or, what was almost as terrible, could condemn to long service in the army. In law and in fact the serfs became chattels, "cattle." The lord might not sell them at open auction, and might not sell them at the time of the military conscription; with these exceptions he was free to dispose of them as he pleased, selling them not only with the land but also away from it. He had practically the power to breed serfs as he bred cattle. Prince Kropotkin, in his *Memoirs*, describing conditions as late as about 1850, tells of a land owner who went over the list of serfs on his estate, picked out five boys over eighteen, five girls over sixteen, and ordered that the five couples be married within ten days. At the church one of the girls refused to be married to the boy assigned her, but was threatened with exile to the steppes for her whole family, and so was forced to consent. Kropotkin tells of a similar instance in his own family. A young serf, in love with a girl on a neighboring estate and hoping to save money to buy her freedom that he might marry her, had arranged with a girl of about the same age in the Kropotkin household that they should act together as godparents of a child; they were afraid that they might be paired, and according to orthodox belief this relation made their marriage impossible. To punish this act Kropotkin's father sent the young serf away for 25 years' service under the terrible discipline of the army—yet the father was regarded as a humane man and one of the best of masters!

CONDITIONS OF SERFS ✓

Part of the serfs were used as domestic servants; some of them were allowed to work as they pleased in return for money dues paid to the lord; most of them on private estates were required to give half or more of their working time to the services of the lord, doing his agricultural work as demanded, and cultivating the bits of land left for their own subsistence as best they could. A ukase (imperial law) of 1801 attempted to limit to three days a week the working time given to the lord, but it was ill observed. The crown serfs, on the other hand, were much better off. They paid taxes and money dues, but were relatively free from the interfer-

ence with their daily lives which the presence of a private landlord almost always involved.

Obviously the conditions lent themselves to grave abuses. Some classes of masters were notorious for their oppression: retired army officers, with barbarous ideas of discipline, speculators or masters approaching bankruptcy and greedy to wring the most they could from the estate in a short time. Kropotkin narrates facts of which he had personal knowledge in his childhood: serfs sold, lost in gambling or exchanged for hunting dogs, and torn from their families, children sold away, "flogging in the stables," much more serious than the usual flogging inflicted by the police or the fire brigade when the serf arrived with a note from the master requesting that a hundred blows with a birch rod be inflicted. The government interfered only in the most serious cases, when murder or inhuman torture was suspected. After 1800 a few cruel proprietors were punished by exile, one, for example, a woman who had murdered a boy serf with a pen-knife because he had not taken proper care of a pet rabbit.

EVILS OF SERFDOM

Shocking as are these and similar examples of the abuses possible under serfdom, they are still superficial phenomena, limited in their effects. Deep down, inherent in the system of forced labor, were evils which were not occasional but general, the effects of which have lasted to our own times. Both masters and serfs were demoralized. The landlords, whether they were "petty," holding up to 100 serfs, "medium" with 100 to 1,000, or "great," holding even 100,000, were getting something for nothing; serfdom was established in the very period in which the landlords were relieved of the public feudal services formerly required of them. Like slaveholders in all ages they were careless and extravagant, always in debt. Some few of them showed ability as organizers, and contributed to Russia's political and economic development; most of them were dead weights on the organization. Still more serious were the effects on the mass of the people. Labor forced by the lord was inevitably reluctant and careless. Inefficiency, learnt in the lord's service, became ingrained in the people. Even when they worked for themselves there was small incentive to efficiency in an organization which discouraged progress. The

lord had such power over his serfs that those who acquired wealth had every reason to fear it would be taken from them. Extortion by a sort of blackmail, the threat of punishment or exile, was always an ugly possibility.

A native Russian, knowing his people well, described the typical member of the ordinary village as follows: "He is poor, a drunkard, unreliable, apathetic as regards the community, indifferent to his neighbor, to his family, and careless of his own fate." No one will suppose that this dark picture is a fair description of a whole people. Yet all agree that the Russian peasant, along with some splendid virtues—patience, persistence, obedience to authority, a simple faith—is prone to grave faults illustrated in the extract. To scold him for them is unreasonable; they were bred in him by the system to which for generations he was subject.

EMANCIPATION

The Russian serfs were emancipated by imperial proclamation in 1861, a date curiously near to that at which, across the Atlantic, Lincoln emancipated the negro slaves of the United States. Long before that time thoughtful students of Russian life had become convinced that serfdom must go if the country were to fit itself to take a place among the states of modern Europe. Reference will later be made to the experience of those who attempted to establish manufactures in Russia, and who became convinced that modern industry could develop only on the basis of free labor. Even in agriculture the very partisans of serfdom were forced to recognize that the lord gained more by free contract with hired labor than by the compulsion of his own serfs. After 1800 serfdom was on the defensive; various laws attempted to alleviate conditions in detail, and the question of general emancipation was given serious attention. Unfortunately the question was involved in the activities of secret revolutionary societies, and the czar drew back from the reform because a concession in this matter appeared to menace his own autocratic power. Meanwhile the serfs reacted against the system in the only ways open to them, by passive resistance in general, by open outbreak when conditions became intolerable. Individual landlords and stewards were murdered; insurrections marked by incendiarism and brutality affected whole regions, and were subdued with ferocious severity. These revolts

increased in number toward 1850, and were especially serious during the Crimean War, when the government drafted many serfs for military service. This war, unnecessary in its inception and fruitless in its results (John Bright, by a change of the letters, designated it as "a crime"), was still a momentous event in Russian history. It convinced the autocracy that Russia, in spite of its great area and population, fighting on its own territory, was helpless in conflict with modern western states such as England and France. Both its economic and its political organization were hopelessly inefficient when subjected to strain. It lacked roads and railroads to make use of its resources, its arms and munitions were antiquated, its commissariat broke down, its finances became inextricably confused. It was betrayed by its own agents; speculation was rampant; lint made for the Russian wounded was sold to the enemy! In the complex of institutions which conditioned the Russian life of the time serfdom was only one element, but it was fundamental; so long as production depended on forced labor reform of the economic and of the fiscal system was impossible. Even the landlords came to realize that the day of serfdom had passed.

EMANCIPATION PLAN

The plan of emancipation was worked out by a commission appointed by the czar. In some respects it was liberal. The serfs were given, as a matter of course, personal freedom, the right to do what they pleased, the right to move about so long (this should be carefully noted) as they fulfilled their public obligations, particularly in the matter of taxes. Furthermore, in contrast to the policy followed in Poland and the Baltic provinces, where the lords kept their estates, the Russian serfs were to be given not only liberty but also land. Finally, in contrast to the plan followed in part of Germany, the peasants were given full power to settle their own affairs in the village assembly, free from interference by the lord.

To sketch the broad outlines of the plan of emancipation is easy; to describe in detail the way in which it was carried out is, within the limits of space of this book, impossible. So many variables were involved that a concise statement cannot pretend to accuracy. For example, domestic serfs were treated differently

from the agricultural serfs; crown serfs got better terms than the serfs of private landlords; serfs in the north, in the central region, and in the south of Russia got different amounts of land; and, to conclude an incomplete statement of the complex situation, a private agricultural serf in a particular part of Russia had several different options offered him. All that can be attempted here is a suggestion of some features of the process which are of interest and of importance.

The government depended on the support of the class of landlords and could not afford to alienate them by emancipating their serfs without compensation. It could not afford to compensate them except as it could collect payment from the serf. What it could and did do was to advance the necessary funds, borrowing by the issue of bonds, and planning a system of repayment in installments by the emancipated serfs which in time would wipe out the debt.

EXAMPLE OF PROCEDURE

Suppose, for example, a serf in central Russia whose dues or services were estimated to be worth to the lord 9 rubles a year. At 6% interest this would be equivalent to a lump sum of 150 rubles. The state would advance four-fifths of this, 120 rubles, leaving the remainder, 30 rubles, to be paid by the serf. The landlord would then be fully compensated if we assume that the bonds in which he was paid could be sold at their face value, and that he could collect the remainder from the serf. Neither assumption was true in fact, but among the parties to the transaction the landlords unquestionably fared best in general; one great flaw of the emancipation procedure was the undue favor shown the landlord class.

The state, borrowing with its superior credit at 5%, could fairly charge the serf 6% on the advance which it had made, and would then have the means not only to meet the interest charge on the bonds which it had issued, but also by applying the extra 1% received from the serf to the repayment of principal could hope to wipe out the debt and relieve the serf of further payment in the course of 49 years.

Finally, the serf, paying to the state 6% of 120 rubles, or 7.2 rubles a year, for a definitely limited period, and paying his share

of the lump sum, 30 rubles, in installments to the lord over a shorter period, would actually be paying out from year to year little if any more than he had previously been giving the lord, and yet at the end of the transaction would emerge with full ownership of the land and free from other payments. The result at first glance appears to be too good to be true, and suggests some concealed trick. But the only magic in the transaction is the ability of the state to borrow at better rates than can individuals. The state acted as a banker, using its credit to guarantee the transaction, and relying on its power over the debtor to bring the process to an effective conclusion. A similar plan had been employed successfully in western Europe, in the enfranchisement of unfree tenants, and much later was employed in Ireland to finance the transfer of land from English owners to the native Irish.

VARIETY OF OPTIONS

The serf in the example assumed above was supposed to have been eager to acquire as much land as the law allowed, in this particular instance (the amount varied greatly in different regions) about 14 acres. This he could do only by reaching an agreement with the lord, and by assuming the charge of one-fifth of the capital sum involved in the transfer. If he held back, forcing the lord to take the initiative, he could get half the amount of land free of the one-fifth payment; or he could get a quarter lot free of any charge whatever, even that of the interest on the sum advanced by the state. The reader may not have found it perfectly easy to understand the operation of the emancipation laws as outlined above. If so he will sympathize with the Russian serfs of 1861, of whom most were illiterate, ignorant, and blindly credulous. The rumor spread through the country that the czar sitting on his golden throne in the Crimea gladly gave land to all who asked for it, and such a movement of people to the south began that the military had to intervene to repress it. It was a common belief that faithless officials were preventing the czar from dividing up all the land among the cultivators, and many serfs held back, fearing a trap in the offers made to them, and hoping to get more land by waiting. Kropotkin frequently heard the rumor among the peasants that Napoleon III in the treaty

closing the Crimean War had required the czar to free the serfs; later one peasant said, in discouragement, "Nothing will be done unless Garibaldi comes." Disorders and revolts marked the execution of the emancipation plan.

FAULTS OF EMANCIPATION

Under these conditions the best of governments would have found it hard to settle the affairs of some 20 million peasants in a way of which all could approve. The government of the time was very far from good. The emancipation of the serfs, a step of vital importance in the progress of Russia toward efficient organization, had in it flaws which troubled government and people for generations to come. The most serious difficulty rose from the fact that the land-hunger of the people was not appeased, that after emancipation as before they were clamoring for more land. The government was really faced by a dilemma. If it gave every family enough land from which to live, made the people into full and independent peasant proprietors, it bereft the lords of their labor supply. The money received by the lords in compensation would have been of little use to them if they could not hire cultivators, forced to look to them for employment because they could not make a living on their own share of land. On the other hand, the grant to the serf of a plot too small to support a family served only to stimulate the craving for more. Later critics of the emancipation plan have suggested that the government would have avoided some of the difficulties which it had to face later if it had boldly chosen one horn or the other of the dilemma, had given all the land either to the lords or to the peasants, and had then let the two parties work the situation out by free economic contract. Political objections to such a course were insuperable; opposition might have culminated in revolution. The government actually chose a middle course. The plan was designed to leave to serfs and to lords about the proportion of land which each had been enjoying under the old system. The results in some parts of the country accorded with this design.

RESULTS

In many districts, however, partly because of the people's distrust and credulity, the free cultivators actually took a share of

land less than that which they had been enjoying under serfdom. Russia is a country of such vast extent and such varied climatic conditions as to make very difficult the interpretation of the statistics of land-holding; an acre in the rich belt of the Black Earth has a very different value from one in the forest region of the north, or on the dry steppes of the south. With that caution the following statistics are presented, giving in Russian measures and in rough equivalents (a dessiatine is equal to about 2.7 English acres) the land lot assigned to the male serf at emancipation in various provinces. On the average the male serf received:

in 3 provinces over 10 dessiatines	27 English acres
in 3 provinces 7-10 dessiatines	19-27 English acres
in 12 provinces 5-7 dessiatines	14-19 English acres
in 15 provinces 4-5 dessiatines	11-14 English acres
in 12 provinces 3-4 dessiatines	8-11 English acres
in 4 provinces under 3 dessiatines	8 English acres

The author from whom these figures are taken estimates a lot below 5 dessiatines (14 acres) as inadequate to the support of a peasant, and taking Russia as a whole (the figures above do not cover the whole country) thinks that at least half the people did not get sufficient land to feed the family and to occupy its labor. Somewhat later (1870) an investigation of selected districts including 9 million peasants showed only one-third with a lot sufficient to support a family, and still later (1897) a more extensive investigation of the peasant population gave the following results:

45 million, 70%, could not raise food for themselves from their land
13 million, 20%, could raise food for themselves but not for their stock
5 million, 10%, could raise food both for themselves and for their stock

In the division of land at emancipation the former serfs chose unwisely not only as regards the amount of land which they took, but also as regards its character. They were so eager to get the plowland for their grain crops that they neglected other land necessary for a balanced agriculture: meadow, pasture, and forest. A disproportionate share of these latter varieties remained in the hands of the lords, and the lack of them proved later to be a serious disadvantage to the peasants. To the fortunes of this

class we shall return in the next chapter. It will be convenient here to trace briefly the course of the landlords after emancipation.

LARGE ESTATES

The lords were heavily in debt in 1861. In the past they had borrowed money from the state on the security of their serfs, and their estates were mortgaged for a large part of their value. A considerable part of the redemption payments was absorbed by the liquidation of these debts; much of the remainder was squandered in extravagant living, in unwise investments, or in unprofitable improvements. Lords, like serfs, were medieval in their psychology, quite unqualified to keep their place in a more modern society. Their place and privileges had in the past been assured them by custom. When they had to enter into a system of contract, they soon betrayed their inexperience and their poor judgment.

In spite of help extended to them by the government, the history of their estates is that of a constant shrinkage in number and extent, until the considerable remnant was swallowed up in the revolution attending the first World War. Some of them learned by bitter experience. One of them told Mackenzie Wallace: "Formerly we kept no accounts, and drank champagne; now we keep accounts and content ourselves with kvass (beer)." Many of them imported from Germany trained stewards to oversee the operations of the estate and to undertake its business management. Some estates became model farms. Some proprietors rose to the opportunities of their position, were useful teachers of improved agricultural technique, and made important contributions to the development of an effective provincial administration. The part played by them just before and during the first World War was highly creditable. In the course of two generations the weaker members of the class had gradually been weeded out. Their estates had been nibbled away, by sale and lease, and they had left the country for the town, generally to enter the service of the government. If the fortunes of this class are dismissed thus briefly, it is because the future did not belong to them, but to the peasants.

QUESTIONS

In what respects is Russia Asiatic?

In what respects is the climate unfavorable?

Meaning and situation of the Black Earth?

Explain the variety of peoples.

What were the historical results of the conversion to Christianity?

What were the results of the period of Mongol rule?

What is the historical significance of Moscow? of St. Petersburg?

Date and explanation of the establishment of serfdom?

Conditions of serfdom about 1800?

What were the economic dues of different classes of serfs?

Instance abuses to which the system was subject.

What evils were inherent in the system?

Date of emancipation, and reasons for it.

What were the principles of emancipation?

What was the plan? Illustrate its operation.

What options were open to the serf? What was his attitude?

What was the dilemma of the government in the distribution of land?

How much land did the average serf receive?

How does this compare with the average American farm? (In 1920, 148 acres, of which 78 were improved.)

How far were the land holdings of the peasants about 1900 adequate to their support?

How did the landlords fare after the emancipation?

READING

James Mavor, *An Economic History of Russia*, 2 vol. (London, 1914), is the most complete and scholarly treatment of the subject in English, and provides an abundance of supplementary reading on the subjects of this and the following chapters, but will be found severe and technical by the ordinary reader. An historical account of the agrarian development, with abundant concrete detail, is presented by Geroid T. Robinson, *Rural Russia under the old Régime* (N. Y., 1932); this is by far the most important book on the subject in English. Maurice G. Hindus, *The Russian Peasant and the Revolution* (N. Y., 1920), covers a shorter period. Of general histories the most serviceable is by Bernard Pares, *A History of Russia* (N. Y., 1926, revised 1930; page references are to the first edition).

Country and peoples. (Pares, chap. 1, pp. 3-20.)

Colonization; the Tartars. (Pares, chap. 3, pp. 40-55.)

Rise of Moscow. (Pares, chap. 5, pp. 73-96.)

Rise of serfdom. (Robinson, chap. 1, pp. 1-24; Pares, chap. 9, pp. 147-162.)

Peter and Russia. (Pares, chap. 12, pp. 199-125.)

Serfdom in the eighteenth century. (Robinson, chap. 2, pp. 25-33; Pares, chap. 14, pp. 234-254.)

Serfdom in the nineteenth century. (Robinson, chap. 3, pp. 34-51; Hindus, chap. 2, pp. 27-39.)

Servile revolutions. (Hindus, chap. 11, pp. 179-202.)

Lords in the period of serfdom. (Robinson, chap. 4, pp. 52-63.)

Emancipation. (Pares, chap. 19, pp. 341-365, Robinson, chap. 5, pp. 64-93.)

Landed proprietors since emancipation. (Robinson, chap. 8, pp. 129-137.)

CHAPTER XXIII

Organization of Russian Agriculture

In the last chapter the institution of serfdom was described at length, because it was so widespread and reached so deep into the life of the people that it conditions their ideas and their acts even to the present day. A considerable part of the present chapter must be devoted to the description of another institution, even more foreign to the life of western Europe in recent centuries, which existed along with serfdom, persisted after emancipation, and has been extinguished only by the drastic measures of the revolutionary government in recent years. This institution is communal land tenure.

COMMUNAL LAND TENURE

Communal ownership is familiar to all of us. In a modern American village, for example, the town hall belongs to the whole village group. Every member of the village is a part owner, and shares in the use of the building, but he cannot distinguish a definite part of the building as permanently his own. The village assembly or the officials who represent it decide the uses to which the building is put, rent the hall for a lecture, give the use of a room to a boys' club, maybe lease a part of the building for some private use for a term of years; but the ownership, the right of final disposition, rests always in the group as a whole. We must conceive this group ownership extended from one particular building to the whole agricultural land of a village and we have the institution which predominated among the Russian peasants down to the twentieth century. Statistics of 1905 showed over four-fifths of the "share" land, the characteristic peasant holding, subject to this system; only along the western fringe of the country did family property, more like that of western Europe, predominate.

ORIGIN OF COMMUNAL LAND

The origin of this communal land tenure is still the subject of bitter dispute. It used to be supposed that it was an aboriginal Slavic institution, connected with the settlement of the country by great groups of blood relations many centuries ago. More recently, however, observers have pointed out the development of a similar system in contemporary Siberia, among people who were composed of many different families, and certainly did not let the question of blood relationship affect their acts. It is now the general opinion that the system developed in Russia in a relatively recent period, and there is pretty general agreement that the spread, if not the inception, of the system was due to the growing burden of taxes and to the method by which the taxes were collected.

From a very early period, while Russia was still paying tribute to the Mongols, the people were formed into groups for the payment of taxes. To reach all the different individuals in a country, to levy on each and collect from him his due share of the tax, requires a relatively good administration. The task is made many-fold easier if the government reduces the number with whom it deals, imposing the tax on the lord, if serfs are in question, or on the village as a whole in the case of freemen, in either case leaving the individual incidence of the tax to be determined inside the group. Under this system of taxation the group has a joint collective responsibility for raising the money; if one man does not pay his share the deficiency has to be made up by others. Assume now a considerable increase in the burden of taxation; for illustration, it is estimated that taxes per capita increased nearly four-fold in the 50 years before and after 1700. The group will find it more and more difficult to raise the sum which is imposed upon it. If it finds one man lacking enough land to enable him to produce a surplus to contribute to the tax, and another man with more land than he can cultivate efficiently, it will take land from one man and give it to another, to increase the total amount which can be exacted for the village treasury. Under conditions in which cultivation is carried on by independent families, not by a system of hired labor, the increase of taxes beyond a certain point leads inevitably to a division of the land,

giving each family that share which will enable the group as a whole to meet most effectively the fiscal demand. As changes occur in the population, adults dying in some families, children growing up to manhood in others, there appears a disparity between labor force and the land for it to cultivate; then a redistribution becomes necessary. A man can no longer say: "This land is mine; I shall hold it during my life and can assure the enjoyment of it to my children." He is merely the possessor of it for the time being; the village as a whole is the proprietor, and can give him notice to quit at any time.

COMMUNAL BONDAGE

Whether or not, as some people think, this system grew up as recently as the eighteenth century, it was, at any rate, the ruling system through the nineteenth. The emancipation legislation accepted it and left it as it was. It was convenient from the fiscal viewpoint, it was thought, to offer social and economic advantages which will be discussed later, and even if it was not, as some thought, an original Slavic institution to be cherished, it was so bound up with the national life that it could not easily be eradicated. The laws which broke the bond between lord and serf left the peasant still tied to the village group of which he formed a part.

The reader now can understand the significance of a description by a foreign writer of conditions after emancipation. "From dependence on the noble landlord the mujik has fallen into dependence on his commune. The bond that tied him to the soil has, then, not been really broken. He is still bound to it by a double chain: undivided property and tax-solidarity. The peasants' liberty is, in a way, like their property: undivided and collective." The village government kept jealous watch of its resources, particularly of the adult males who must be the main contributors to its tax fund. A peasant could not leave the village to seek work elsewhere in field or factory without giving security for present and future liabilities, he must get written permission serving him as a sort of passport, he was merely on leave of absence and was subject to recall. As will appear later, when manufacture is being considered, many factory workers were still tied in this way to their village.

ADMINISTRATION

In the administration of the system there was a great variety of procedure and it is possible here only to sketch some features which may be taken as broadly typical, but which must not be assumed to have been universal. The usual practice was to divide the land in proportion to units of labor power of the people. The adult male or the married couple would be a natural unit. Families including several adult workers would be given more land—and would have to take it, be it noted, as their taxes would be increased proportionately, and could be paid only by raising more crops. Often fractions of units were recognized; a young unmarried man or a man past 55 would be counted as a half, a man too old to work would be given no land and could be free of taxes. Often account was taken of the live stock, which would be, of course, an important factor in efficiency.

EXAMPLES

Before emancipation the practice was usual of enumerating the people by "souls," male serfs, and all through the later period the peasants constantly used that unit of reckoning. So in one village (Tirogow, Saratow) families were grouped in the following classes, with taxes and land to correspond:

- (1) Households "without souls," "unfit"
- (2) Households with one soul, but without a farm animal
- (3) Households with a horse, cow, sheep or half-grown lad. counting $1\frac{1}{2}$ souls
- (4) Households with more males, and stock: counting from 2 souls up.

In another village (Aráshin) according to a common practice the difficulty of fractions was avoided by increasing the number of lots into which the land was divided. In a certain year the distribution of land among families was as follows:

- 3 families "without souls": no land or taxes
- 10 families "half-power" with one soul but no horse. each 1 lot
- 45 families normal, one soul, 1 or 2 horses: each 2 lots
- 30 families superior in number of men or animals: each 3, 4, or 5 lots.

The portions of land and of taxes allotted to families in this village varied every year. A certain family had $4\frac{1}{2}$ lots in 1874, 5 in 1875, $5\frac{1}{2}$ in 1876; children in it were growing up. One family

which had 4 souls according to the conventional enumeration had only $2\frac{1}{2}$ lots, because one of the men concerned had bad eyes and another had a chronic throat trouble.

LOT-GROUPS

This system of proportioning land and labor required a village to establish units of each in working out the equation. The method of estimating labor power has already been suggested. In the smaller villages each family was given a certain rating, and the land was then divided directly among the families. In the larger villages it was more convenient to combine families into equal groups, divide the land in the first instance among these groups, and then let each group subdivide its land among the component families. This practice simplified somewhat the administration of the system, leaving details to be worked out by those most directly concerned, and facilitated the apportionment of public duties. Every village had such obligations as the making and repair of roads, ditches, and bridges, the provision of quarters for soldiers, the transportation of goods for the government. If, for example, in a village with 40 families, a task was imposed requiring 8 days of labor, it was more convenient to divide it among 8 lot-groups, letting each send a man for one day, than to require each "soul" to give one-fifth of a day to the work. These lot-groups, ranging up to 30 souls in number, were formed in different ways, sometimes following the arrangement of houses in the village, sometimes by lot. Copper coins or bits of wood with a distinctive mark (rarely paper with written names!) would be drawn by a child from a cap, or shaken out of an urn. As the group approached completion it would be filled out by lot among those offering suitable units or fractions. Villages would allow exchanges among lot-groups, to bring relatives together or to keep enemies apart, but distrusted lot-groups formed by free agreement; they were afraid that the most capable would get together excluding the drunkards and incompetents, who would form a group by themselves, letting weeds grow on their land and unable when the tax collector came to meet their share of the village dues. It seemed better to compel each group to take its share of the shiftless among them, and do what it could to keep them in order.

LAND DIVISION

The division of the people into equal units of labor power and tax-paying capacity solved only half the problem. The land also had to be divided into units to match. The division of the village territory into blocks equal in area would have satisfied nobody. Even in a country like Russia, marked in some regions by great uniformity of the soil, there are countless variations within the limits of a single village, apparent to anyone with agricultural experience, and even if the uniformity had been complete there was always one variable, distance from the village, which made an acre in one situation more desirable than an acre in another. In this as in other matters there was in Russia a variety of procedure, and the following description must not be taken as universally applicable. It was, however, the system generally followed in central Russia, where the agricultural population was most numerous, and it may be taken as the characteristic and the most important of the Russian field systems.

FIELDS

To understand the arrangement the reader must distinguish three terms which will be used in the description: field, shot, strip. Russia still adhered to the three-field system of agriculture, known already to the reader in its application in western Europe, and requiring the division of the plowland into three parts, roughly equal. Rarely, however, did the field dedicated in a certain year to its special use, winter grain, summer crop, or fallow, consist of one block of land; it was usually made up of several different pieces, permanently marked off but scattered over the territory of the village.

SHOTS

Every family must have its share not only in each of the three fields, not only in each part of each of the fields, but beyond that in each part of these parts differing in quality from another. Each of the larger blocks, composing a part of one of the three fields, was therefore divided into shots, to use the old English term. Within the bounds of a shot the land was roughly uniform with respect to the important variables, quality of the soil, exposure and water supply, distance from the village.

STRIPS

If, then, each shot was divided into as many parts as there were families or lot-groups in the village and distributed among them, land and labor were matched as closely as was possible. Every shot, therefore, was cut up into strips to suite the number of labor units, and every family got strips according to its number of souls. If in a certain shot, for example, the unit strip was 10 feet broad, a family with one soul would get merely that, a family with two souls would get 20 feet, and so on.

In the province of Moscow there were, on the average, 11 shots to a field, making 33 for the three fields; the number varied from 3 to 20 in one field, being larger, naturally, in the larger villages. The width of the strip would evidently depend on the number of families in the village, on the size of the shot, and on the number of souls in the family. In one province (Jaroslaw) the narrowest strip of a single soul averaged 14 feet in breadth; the usual breadth was 26 feet. The peasants in one place complained that the strip of a single soul was no broader than a harrow, and in the province of Moscow a strip was recorded measuring 7 feet for 2 souls. The normal family was reckoned at more than one soul, and the small families could do something to obviate the narrowness of their strips by exchanging strips in different shots, or by combining strips in the same shot and dividing them crossways. The effect of all these arrangements on the productiveness of agriculture will be the subject of discussion later.

The house lots in the village, with small garden plots used for growing vegetables and hemp, were not included in the communal division but were hereditary family property. The meadows were either allotted like the plowland, with frequent redistribution to suit the changing growth of grass, or were mowed in common, with a division of the hay. Woodland was generally utilized by clearing a part in common and then dividing the product.

REDISTRIBUTIONS

Like as was this Russian system in its externals to the open-field system of western Europe, it differed in one characteristic of great importance. In the west, during the centuries of which we have

sure written records, the strips remained permanently in the possession of the families holding them. Even the servile tenants of a manor were protected by custom in the possession of their land; even in their case we do not find any general practice of redistribution. In Russia, on the other hand, changes in population were accompanied by a constant process of equalization. A general redistribution, affecting the size and number of the strips, was not an easy matter to administer, and was deferred as long as possible. The question would be debated in the village assembly, sometimes for two or three years, and often with a great deal of bitterness. Changes in the taxpaying capacity of individual families would be met by exchanges of lots, or by drawing on a reserve of land which in some villages was kept for this purpose. These partial allotments, however, soon complicated arrangements so much that a general redistribution became necessary. A commission which reported on the subject in 1872 found that annual redistribution was not uncommon, but that periods of 3 years or of 6 years, suited to the rotation of the three-field system, were more usual. There had been, in the time immediately preceding, a tendency to extend the term to 12 or 15 years or even more. In the province of Moscow the average term was a little over 12 years; only one-tenth of the villages had a term under 3 years, and nearly half of them had a term of 15 years or more.

The Russian village was called *mir*, a word signifying also "world." In fact it was a little world of its own, nearly self-contained, paying its taxes but in other respects having few contacts with the rest of the country. In politics as in economics the *mir* was nearly autonomous; to a Russian peasant it *was* the world. Its constitution and operation were, therefore, of vital significance to the people.

SLAVIC FAITH IN THE MIR

A German, Haxthausen, well educated, well read, who had traveled widely in Europe, visited Russia in 1843-44, and wrote a book extolling the Russian as the ideal organization. Everywhere else in Europe he had found signs of revolution against wealth and property, a demand for equal division of the land and a platform of opposition to the privilege of inheritance. In

Russia he found these utopias of the revolutionist established in the life of the people. "I know the rural constitutions of many countries of Europe, in part from my own observation and investigation; but I have not become acquainted with any which would be regarded as equal to the Russian village constitution, in well-ordered organization, in inherent moral strength, in social and political significance, in distinguished value to the government to serve as foundation and support of the whole structure of the state."

Similar ideas were cherished by native Russian writers. The Slavs had entered the European family late, and resented the claims to superiority of the western peoples. The Slavophiles (literally "Slav-lovers") idealized native institutions and felt it a patriotic duty to magnify their virtues. They conceded to the peoples of the west, Romanic and Germanic, leadership in the past, but asserted that the future belonged to the Slavs. "He who has just been born is happier than he who is dying." Readers of Kipling's story, "The Man Who Was," will recognize the type. In particular, they asserted that the proletariat which menaced the industrial west was impossible under the Russian system, which always found land for the landless.

The justice of these claims will be examined in later pages, in which the attempt will be made to describe in some detail the life of the Russian *mir*, not only economic but also social and political. A warning is necessary at the start. Communal land tenure, the most characteristic feature of the Russian system, was only one of a complex of institutions, and it is extraordinarily difficult to distinguish its particular effects from the influences of other factors. It is particularly important to remember that the Russian peasant had just emerged from serfdom, that he was almost incredibly narrow and ignorant, and that we must look mainly to this fact, in the ultimate analysis, to explain the inefficiency and the faults of the organization.

OPEN-FIELD SYSTEM

Part of the criticism directed against communal land tenure applied really to the open-field system, and although reference has already been made in earlier pages to the faults of open-field agriculture, as evidenced in western Europe, the subject must

again be illustrated with the abundant material provided in the recent history of Russia. The land lot of the peasant after emancipation was not large, say 10 to 20 acres, to give some vague conception of the area. Yet an author, writing after 1900, asserted that in most of Russia one could scarcely find a village in which the holding of one peasant was not scattered at least in 20, often in 30 or 40, sometimes in more than 100 separate fragments. Instances are mentioned in this later period in which strips were actually less than a yard broad.

FAULTS

Obviously there was a waste of labor in cultivating the strips; a width of 26 feet was regarded as a desirable minimum, but even on a strip of that size it was impossible to plow or harrow across. There was a waste of seed in sowing; some of it inevitably fell on the boundaries between the strips. There was a waste of land in boundaries. The shots were divided by roads or by stretches of brush some 7 feet broad; the strips were separated by balks or furrows only a foot or two broad but absorbing in the aggregate a considerable amount of land and affording a refuge to weeds, insects, and birds. A cultivator was more or less at the mercy of those on either side of him, who might let their strips grow foul with weeds if the community did not interfere, as it often had to do. There was a waste of soil by erosion, particularly in the region of the Black Earth. Strips were laid out at right angles to the water courses, as the quality of the soil varied in this direction; furrows therefore ran down hill and started gullies which were described as a cancer of the region. There was a waste of time in going with the implements of cultivation from the house in the village to one strip and then to another. Finally, and in some respects most serious of all, the open-field system tied the people hard and fast in the routine of the medieval three-field system. Some villages levied a fine (payable in whiskey!) on any member departing from the usual course of operation. He must sow a crop ripening at the same time as that planted by the others, he must leave the stubble open to pasture by the village animals. The same compulsion prevented him from giving an extra plowing to the fallow. The cultivation of such an important food plant as the potato never became important, because it could

not be introduced without a general agreement. This three-field system, which was general except along the Baltic and on the steppes, exhausted the soil and kept the land foul with weeds. It needed a great supply of manure, but did not provide the forage crops to support numerous live stock, and furnished a very poor pasture in its stubble and fallow.

All these faults marked the open-field system; there is really nothing to be said in its favor, when it is compared with the American block farm. This system could be and was maintained where there was no communal tenure; it had existed in western Europe and it existed in western Russia under family ownership as well as in central Russia. Yet it was a necessary accompaniment of communal tenure, bound up in its operation, and presenting one of its worst features.

FAULTS OF COMMUNAL TENURE

An imperial committee which investigated rural conditions in 1872 took evidence from some 300 persons well acquainted with village life, many of them peasants; of these only 30 favored the existing system of communal tenure and open fields. The great majority urged a reform, specifying such evils of the open-field system as have already been considered, and, further, describing evils peculiar to communal tenure which must now receive attention. The opinion was all but unanimous that the peasant who might at any time have his land taken from him to be given to another, showed little care in maintaining its fertility. In the province of Kaluga, "The peasant carries almost all the manure to the hemp field: the arable is manured scarcely at all, for fear that by a redistribution 'the manured land would go to a different man.'" In the province of Novgorod the testimony was that the more attention some peasants paid to their strips the more frequent were redistributions, as the poorer peasants envied them and hoped to get the benefit of their improvements. In other provinces there was evidence that redistributions coming as frequently as every 5 or 6 years brought exhaustion of the soil, but that extension of the term to 15 years or more led to better agriculture, though even then there was less care taken of the land when a redistribution was in prospect. When Arthur Young used the term "magic of property" and said that it would turn

desert sands to gold, he hardly exaggerated. One official said that one would have to live with the people to realize what effect secure property rights had upon them, "with what determination, independence, frugality, and industry a man distinguished himself." It was the general complaint that the combination of insecure land tenure and joint responsibility for taxes (and the two naturally went together) made the peasants lazy and negligent. It was said that the western provinces where private property in land was prevalent, in spite of a poorer soil, showed much better economic conditions than central Russia, and it was asserted, perhaps with some exaggeration, that in one district the yield and rental of communal land were only half that of land held in individual property. ✓

COMBINATION OF INSTITUTIONS

The communal tenure in itself was an evil, without question, yet the bad results proceeding directly from it have probably been exaggerated. Investigations made shortly after 1900 would tend to show that only half of the villages had periodical redistributions, and that the term of these was usually 12 to 15 years. In a considerable proportion (about one-third) of the villages there had been no redistribution since 1861, the year of emancipation. Communal land tenure seems to have been little if any worse in its effect than the joint responsibility for taxes, which, as actually administered in the villages, tended to exempt the shiftless and to throw an undue share of the burden on those who had saved enough to own good farm stock, and who were hence reputed able to pay for others. Even the open-field system, bad as it was, did not make an improvement in the system of crops impossible, if the villagers would agree to give up their right to let the farm animals graze on the strips after a certain date, and if (as was often the case) a cultivator could reach his strips without passing over those of others. At the risk of wearying the reader I must repeat that not any single one of these institutions was responsible for the backwardness of the Russian peasant, that it was a combination of all and more of them which kept him back, and that the situation was so bad because these institutions exactly suited him.

The evil of conditions, bad enough at best, was intensified by

two special phenomena which may be summed up in the phrase: villages too large and families too small.

OVER-LARGE VILLAGES

The usual Russian village, like most agricultural groups of the kind, consisted of a few hundred people. In the belt of the Black Earth, however, and on the steppe, villages approached or exceeded 2,000 inhabitants in size. In those regions it is hard to find an adequate water supply, the drifting snows of winter make the separation into smaller groups unpleasant, and protection from marauders is an element of some account. The land of these villages stretched out for miles from the houses; it had to be divided into many shots, the strips were necessarily far distant from each other and from the home of the cultivator, the large population led to frequent changes in personnel and in land distribution. It did not pay to haul manure more than a mile or two, and the cultivation was in general wasteful and bad. Some of these evils appeared even in the smaller villages, whose land at emancipation had been set apart not in one compact block but in several pieces or in an area with the village on the edge. When a lord had his country house near the village he would want to keep his own land about it, and the result last described would be natural. One case is mentioned in which the village was enveloped by the lord's land on three sides, and in many cases the village land extended in a narrow strip for miles.

SMALL FAMILIES

Patriarchal customs still persisted in Russia when serfdom was abolished, married sons remained in the family under the authority of the father, and at emancipation the average Russian family had two or three adult male workers over 18 years of age. In the course of a generation the number of workers diminished to one or two. Adult sons could get land for themselves and wanted to escape from a household in which there was almost always tyranny or dissension. The break-up of the large family, socially and morally a benefit, was attended by economic disadvantages. It was necessary either to duplicate the equipment of home and farm, house, stove, shed, horse, implements, or to put up with poorer substitutes. It was more difficult to arrange

an effective division of labor, in the farm work or in a by-industry; under the old system one male would frequently be sent away to earn money while the others kept agriculture in operation. A large family, prosperous according to peasant standards, might dissolve into several small ones, all on the brink of destitution. ✓

VILLAGE PROLETARIAT

The Slavophiles exalted the *mir*, the village world, as a native institution which would protect Russia from the class divisions of the west, and would make forever impossible the growth of a proletariat. Under the régime of serfdom, indeed, a certain measure of equality was maintained. Liberty and equality, however, are an ill-assorted couple. After emancipation a process became apparent to which the Russians applied the borrowed word "differentiasia." The strong, thrifty, and industrious began to rise in the village world, the weak and thriftless began to sink.

The Russian village is, one would suppose, the last place in which to look for the vices of capitalism, yet all over the world, in Asia as well as in Europe, the agricultural village is the setting in which the power of capital is exploited in its most horrid form. To those who have more is given, from those who have not, even that little which they have is taken away. Some incident, a crop failure, the death of a horse, a fire, illness in the household would start a family on the downward path. A study of a number of peasant households which had gone to pieces in the province of Moscow showed over one-third which had not worked their land, presumably from lack of seed or stock, another third ruined by borrowing or drink, the remainder reduced to destitution by a death in the family, by the number of children, or by other causes. If a family met the emergency by the sale of live stock or farm equipment, which together composed most of its scanty fund of capital, it reduced productive efficiency; it hired a horse when the owner had finished plowing, but got its seed in too late, had less manure, and declined from year to year.

USURY

The alternative was borrowing at rates of interest which to those accustomed to the competitive markets of the western organization seem incredibly high. Interest on a cash loan was

usually at least 5% a month, 60% a year. The regular usurers made loans under conditions which would net them at least 100%. A measure of grain borrowed in the winter when the price was 0.82 ruble might have to be paid back before the harvest when the price had risen to 1.10 or 1.15. The difference does not seem excessive, but it amounted to an interest rate of 80 or 100%, and the reader can imagine what would happen to a speculator on the stock exchange who regularly sold short at 80 and had to cover at 110 or 115! Investigation showed individual cases in which the interest rate rose to fantastic heights, 150, 300, 800, even 1,200 or 2,500%! When the village borrowed as a community, to buy seed after a crop failure or to meet taxes, it enjoyed better credit; a rate of 40% is given as an average. Yet the village of Bosilov, which in 1871 was forced, as the result of a hail storm, to borrow 2,800 rubles at a stipulated rate of 20%, in four years paid 4,400 rubles and still owed, according to the accounts, 2,600! We may well accept the remark of the peasants regarding the financier who administered this transaction: "He is a clever fellow."

KULAKS

The term *kulak*, "fist," or "mir-eater," was given to these usurers who, under the régime of apparent equality, managed to reduce weaker members of the village to dependence on them. They were often, in form, mere peasants themselves, often they sold liquor and used it to master victims, they were sometimes members of the clergy or of the administration. If not themselves officials, they managed generally to have an understanding with the secretary and head man of the village, and used political influence to further their private fortunes; the apportionment and collection of taxes offered them regularly an opportunity to exercise their financial genius.

The statement was made on an earlier page that the serfs, freed from their lords, were held in bondage to the *mir*. Many of them were reduced still further to personal dependence on a "fist" who proved to be a harder master than the noble landlord of the past. The official representative of the Imperial Economic Society said in his report (1890): "The peasants now work for others not less than four days a week, that is to say, more than

when serfdom existed." The peasant, under the communal system, had no land which he could sell, but he could lease his lot to another, and he could sell his most valuable asset, his working time. The "fist," driving an extortionate bargain in both regards, could make a peasant work his own land to the usurer's advantage, or he could sell the man for a time to work away from his land.

CREDIT BONDAGE

"There exists a veritable trade in slave labor. Traveling from village to village these usurers furnish the peasantry with money, binding the borrower to repay the debt by summer work; and having thus acquired a working force, sell it at a price two or three times higher to those who require summer labor. This system obtains as generally in the south as it does in the north. In winter time, when some unfortunate peasant is threatened with an execution for non-payment of taxes, or in spring when he is threatened with starvation, the usurer buys for a trifle his summer labor, giving him in advance from 15 to 30 rubles (£2 5s. to £4 10s.) [\$11 to \$22]. In spring the usurers drive whole *artels* [cooperative groups] to field labor and to factories, having sold their labor at double the price they paid. . . . Traders of another sort travel through the country engaged exclusively in the traffic in children. Many poor parents for a trifling sum sell their children for a certain number of years, in the course of which the children are to be left with tradesmen or artisans in the capacity of apprentices. Having bought in this manner a score of children, the trader sends them in carts to St. Petersburg, precisely as traders of another kind send calves. In St. Petersburg these children are sold to shops and factories at a profit of from 200 to 300 per cent. Such a trade in children and in adults is generally prevalent in the Moscow, Ryazan, and other governments."

Obviously conditions like this were never intended by the reformers who enfranchised the serfs. If imperial laws could have remedied the situation they would have been published without hesitation. The government was powerless to correct the evils. It could not reach into the villages, to regulate their affairs; there were, in Great Russia alone, 180,000 *mirs*, in all Russia 243,000. It had to let the people find their level for themselves.

VILLAGE AUTONOMY

In the days of serfdom the lord or his steward had great influence in the ordering of village affairs and in the administration of justice. Villages on the crown estates were much more independent, and at emancipation practically complete autonomy was granted to all the village groups. Russia, as Mackenzie Wallace said, was a land of paradoxes: "In 'the great stronghold of Caesarian despotism and centralised bureaucracy,' these Village Communes, containing about five-sixths of the population, are capital specimens of representative constitutional government of the extreme democratic type!" The *mir* decided the complicated questions involved in the apportionment of taxes and the distribution of land, it imposed on its members the fulfillment of their communal duties, it granted them leave of absence and recalled it at pleasure. It had not the right of justice in the case of crime, but could punish ordinary misdemeanors by fines or short terms of imprisonment, or by flogging up to a (theoretical!) limit of twenty blows with a rod. By a two-thirds vote, at a full village meeting, it could banish the "vicious or pernicious," a very serious matter for it implied ordinarily exile to Siberia. This power was abused, particularly when the village was relieved of part of the expense, and had to be restricted; but in 1884 it was said that 5,000 peasants, expelled from their villages, yearly crossed the Urals.

VILLAGE POLITICS

The ultimate authority in the village was vested in the assembly, the "town-meeting," composed of heads of households and often including female members. These last, however, were not encouraged to speak except on matters directly concerning them; "the hair is long but the mind is short" was the peasant adage. This system of government, so much like that which the Puritans operated with signal success in colonial New England, was, as applied to a society of enfranchised serfs, a grievous failure. There is practically unanimous judgment that the village governments were arbitrary, inefficient, wasteful, and corrupt. Wallace witnessed in one village the decision of the question whether a gin-shop should be established there; the whole

female population and the best part of the males opposed it, but the would-be proprietor, by "strong arguments," got the vote of the majority. A landed proprietor in one of the provinces testified that the village assembly was often ruled by two or three men, to whom the majority were in debt and whom they did not dare offend. These men ran the village affairs to suit their private interests. This condition seems to have been not exceptional but typical. The head man of the village occupied a position of disagreeable responsibility, in which he might be ruined by the pressure of the powers above; the better elements in the village shunned office and left it to the less respectable. One authority, who reported to the British government on the matter in 1870, said bluntly that often the most vicious was made head, generally a greater drunkard than the rest, and friend of the keeper of the dram-shop. A careful observer wrote in 1880, "It is the current opinion that every peasant becomes a rascal when he gets to be village head, and in fact I have not been able to find an exception to this rule." He pictured the head man as dodging taxes himself, imposing a double tax on another, speculating with the village funds, always open to corruption. Not until 1880 did the imperial government do something to protect the people from their own weakness and inexperience. A law of that date established the office of "land captain," to be filled by some members of the landed nobility of the region, who would keep an eye on the village government and do something to curb its faults.

QUESTIONS

Illustrate communal ownership; what was its extent in Russia?

Explain how communal land tenure may have arisen.

Explain how and why emancipation merely substituted one master (the village) for another (the lord).

How were the people classed for the distribution of land and taxes? Illustrate.

Meaning and advantage of "lot-groups"?

Why could not the land be distributed in blocks of equal area?

What was the width of a strip?

How did the system differ from the medieval?

What was the usual period before redistribution?

What was the judgment of Russians on this system?

In what respects was the open-field system wasteful?

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How did it affect the system of crops? the keeping of live stock?

What were the evils peculiar to communal land tenure?

What institutions combined to prevent progress?

Why were some villages so large? What were the bad effects?

What economic disadvantages attended the break-up of the patriarchal family?

Illustrate occasions of economic decline of a peasant's family. Why was recovery so difficult?

What were characteristic rates of usury?

How did kulaks depress weaker members of the village?

Illustrate credit bondage.

What were the political powers of the village?

What were the vices of village government?

READING

The single book which best presents in interesting form the background of contemporary Russia is Sir Donald Mackenzie Wallace, *Russia* (references are to the revised edition, N. Y., 1905). Less substantial but likewise interesting and well informed is Francis H. E. Palmer, *Russian Life in Town and Country* (N. Y., 1901). Maurice G. Hindus, *The Russian Peasant and the Revolution* (N. Y., 1920), gives a vivid picture of agrarian conditions before 1917. A book of great value, if a copy be available, is *The Industries of Russia*, published at St. Petersburg, 1893, for the World's Columbian Exposition, by the Ministry of Finance; the English translation was edited by John M. Crawford. Volume III contains 14 chapters on Russian agriculture.

The peasants after emancipation. (Wallace, chap. 31, pp. 464-490.)

The village community. (Wallace, chaps. 8, 9, pp. 107-134.)

Peasant agriculture. (Palmer, chap. 4, pp. 36-50; Hindus, chap. 5, pp. 73-92.)

Peasant characteristics. (Palmer, chap. 8, pp. 95-112.)

The Slav family. (Wallace, chap. 6, pp. 79-89.)

The legal and social position of the peasant. (Hindus, chap. 4, pp. 61-72.)

Village government. (Palmer, chap. 9, pp. 113-126.)

Political ideas of the peasant. (Hindus, chap. 9, pp. 138-152.)

Social ideas of the peasant. (Hindus, chap. 10, pp. 153-178.)

A peasants' meeting in Russia (Pares, in *Contemporary Review*, 1905, 88:783-798.)

Life on large estates. (Wallace, chaps. 21, 22, pp. 283-319; Palmer, chaps. 2, 3, 7, pp. 8-35, 81-94.)

The noblesse. (Wallace, chap. 20, pp. 267-282.)

of swampy land of which only a bit ($31\frac{1}{2}$ acres) was already in cultivation, had reclaimed and brought under the plow half of the remainder in the course of a year; he was old and deaf but happy as a king. Political considerations undoubtedly played a part in the reforms. The war with Japan in 1905 had stirred up an agitation amounting practically to revolution. Many landed proprietors had fled in panic to the towns. The new policy promised to build up in the villages a class with a substantial interest in private property who would stand with the landlords in resisting attacks on it. Socialistic doctrines were already widespread both in town and country, but the author just quoted instanced the case of another peasant who, during the revolution of 1905, had sworn by Marx and Kautsky, but who was one of the first in 1906 to apply for an allotment of private property. The policy aimed to create a conservative class in the villages who would support the landlords, while the proletariat was to be forced into the towns to work at low wages in the factories of the industrial capitalists.

PROBLEM OF ENCLOSURE

Involved in the question of communal tenure but more extensive, more serious in its effects, and much more difficult to solve, was the question of the open fields. A law dating as far back as emancipation, 1861, had permitted the enclosure of the open fields and consolidation of the strips in separate blocks, but had not led to results of any importance. The question rested until the reform period, after 1900, when an official, Koefoed, who had had experiences in the matter in Denmark and who realized its importance, brought the government to action.

Anyone who reviews the land arrangements of the Russian village, as described in the preceding chapter, will realize that their transformation into a system like that of American farms was bound to be both expensive and difficult to execute. The ideal holding was considered to be a square including not only plowland but also meadow, pasture, and woodland, with the dwelling at the crossing of the diagonals. Any departure from the square forced the cultivator to traverse greater distances to his work, and the separation of meadow, pasture, or woodland from the home lot was still less desirable. An arrangement in-

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ferior to any of these left the dwelling in the village group, as it had been, at a distance from the cultivated land, but still gave him this in a compact piece, not in scattered fragments.

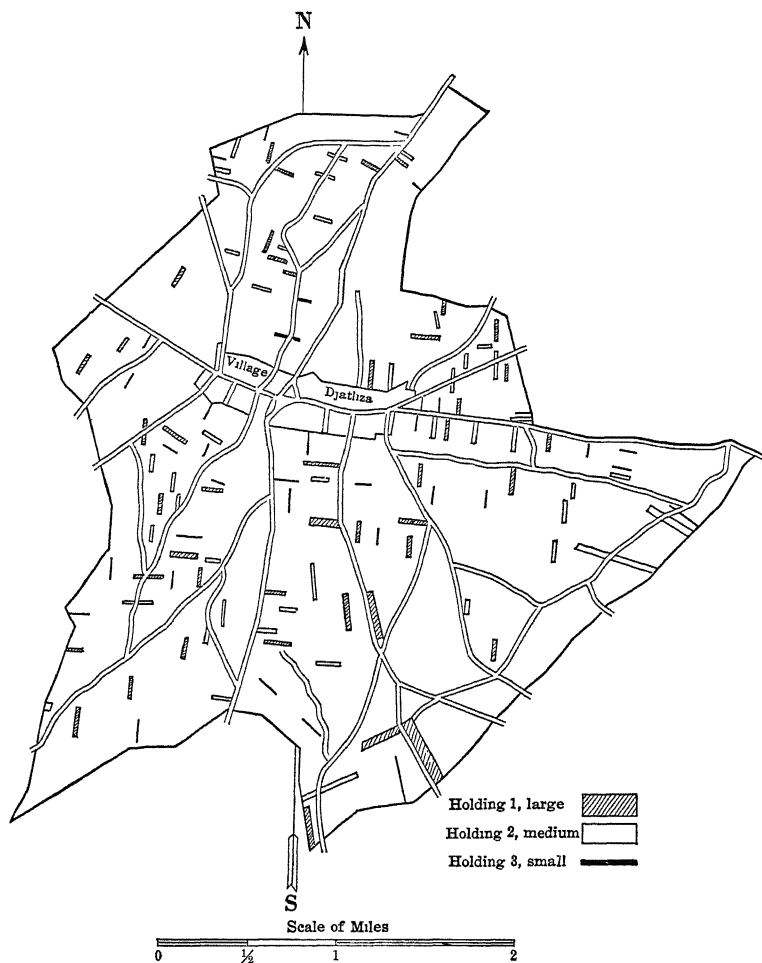
DIFFICULTIES

The ideal solution was usually impossible. Meadow, pasture, wood, and water could not be shuffled and dealt in a new combination even by the imperial ukase of the czar of all the Russias. It was hard enough at best to evaluate the different grades of plowland, and to distribute lots equal in quantity and quality combined. The uniformity of the soil in many regions somewhat simplified this problem. But everywhere government agents were hampered in their work by the ignorance and distrust of the peasants, and were often faced by threats of violence. In eastern Russia the experts and surveyors found a widespread belief that the land was being taken from the peasants to be given to the French, to reward the latter for help given in the war against Japan! One author recalls the remark of an early economist that it was easier to convert the peasant to a new religion than to get him to introduce a new variety of potato.

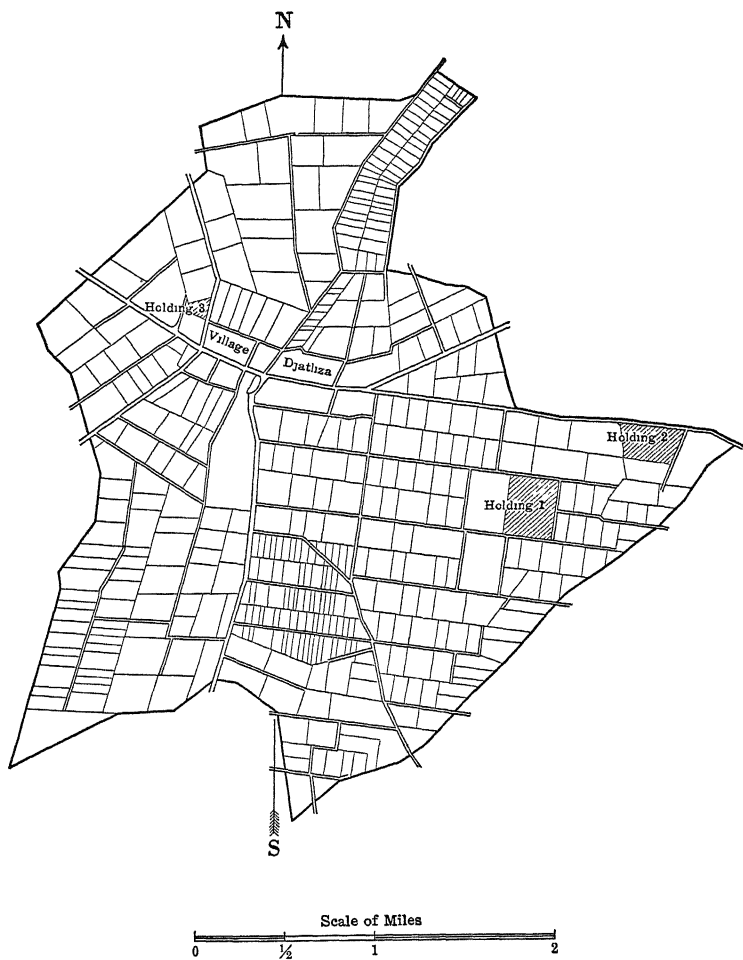
Difficult as was the problem in a single village, the reader, to realize its scope, must recall the immense area involved. The share land of the peasants covered an area equal to that of the agricultural land of Germany, France, and England combined. Hundreds of millions of acres, tens of millions of people, hundreds of thousands of villages, were involved. With 12,000 agents employed in the work, it was estimated that 20 years would be needed to bring it to a conclusion.

RESULTS

Actually, in the nine years before the Bolshevik revolution, very considerable progress was achieved. Applications from nearly 9 million peasants, asking for at least the establishment of individual property rights and the laying out of roads so that an individual could reach all his strips, were received. More than 1 million block farms were created from the strips of the shareland; counting in farms made from land purchased from the Peasant Bank and the state, the total number of block farms exceeded 1.5 million, averaging about 27 acres apiece. Important



SAMPLE HOLDINGS IN A RUSSIAN VILLAGE WITH OPEN FIELDS BEFORE ENCLOSURE.



THE SAME HOLDINGS AFTER CONSOLIDATION.

as were the results already accomplished, they still left the larger part of the work to be done when the first World War distracted attention, and the revolution changed abruptly the course which had been followed.

QUESTIONS

What was the agricultural yield compared with that of other countries?

Compared with the medieval?

How did the yield compare with that of the United States?

What was the character of agricultural implements and methods?

What was the estimated annual income per capita of the Russian people and of the peasant about 1900? How was it affected by taxation?

What was the nature of the tax system?

Estimate the burden of taxes on the peasant.

Illustrate the difficulty of collecting taxes.

Explain the frequency of famines.

What was the standard of living measured by (a) housing, (b) food?

Explain the evil of drink.

How did vital statistics compare with those of other countries?

Why was the death rate so high for infants? in the rural districts?

Illustrate the prevalence of illiteracy.

Compare the use of the post with that in other countries.

What was the average land holding of the individual and the family at different times? (Note what was said above regarding the concentration of population in central Russia.)

What evidence of improvement was there after 1900?

Give the date and occasion of Stolypin's reform.

What reforms had preceded this?

From what sources was fresh land provided?

What were the measures taken to dissolve the communal village?

What were the economic and political factors in the reform?

What different forms might enclosure (consolidation) take?

State the difficulty of the problem, and results.

READING

Elements of the peasant problem. (Robinson, chap. 7, pp. 117-128; Hindus, chap. 15, pp. 278-290.)

The demand for land. (Robinson, chap. 6, pp. 94-116; Hindus, chap. 8, pp. 124-137.)

Life of the peasant. (Robinson, chap. 12, pp. 243-265; Hindus, chap. 1, pp. 3-26.)

The cooperative movement. (Hindus, chap. 16, pp. 291-307.)

Education. (Hindus, chap. 3, pp. 40-60; Palmer, chap. 21, pp. 296-304.)

Taxation. (Hindus, chap. 6, pp. 93-107.)

- The country priest. (Wallace, chap. 4, pp. 46-64; Palmer, chap. 6 pp. 65-80.)
- Medical service. (Wallace, chap. 5, pp. 65-78.)
- The revolution of 1905. (Robinson, chap. 9, pp. 138-168.)
- Results of the revolution. (Robinson, chap. 10, pp. 169-207.)
- Attempted reforms in land tenure. (Robinson, chap. 11, pp. 208-242; Baskerville, in *Fortnightly Review*, 1907, 87:611-619; Lebedeff, in *Contemporary Review*, 1913, 103:81-91; Ely in *American Economic Review*, 1916, 6:61-68.)

CHAPTER XXV

Russian Manufacture: Early Forms

Before Peter the Great the manufactures of Russia were in a stage of development like that of western Europe under Charlemagne nearly a thousand years earlier. The serfs made for themselves or for each other the simplest necessities of home life. The lords imported luxuries, brought in foreign artisans to make them, and got some products from their own domestic serfs. Aside from these workers, relatively few, there were none who made their living in manufacture.

FACTORIES UNDER PETER

In his determined effort to modernize Russia, Peter needed money, above all for war. In his budgets the military expenses made up three-quarters, in one year even 96%. Money was hard to get; Russia was still medieval in organization, with little money in circulation. He levied taxes on beards, coffins, bathrooms, chimneys, cellars, wells, on anything which promised to yield a return, and still lacked funds. To get what he wanted he was forced to make it. He opened mines and built factories, and stocked them with a labor force of crown serfs and of riffraff: vagabonds, criminals, prisoners of war, deserted wives, and orphans. Some of the mines and factories were large enterprises, employing a number of laborers approaching or exceeding 1,000 apiece. All of them were based on the simplest hand work, without power or anything but rudimentary machines. "Strikes" in these factories were little revolutions, quickly repressed by the knout.

In this way the czar obtained the essentials for his military organization: gunpowder and arms, cloth for uniforms, sailcloth for the navy. Further, he stimulated the manufacture of many luxuries which had previously been imported—silks, ribbons,

stockings, and so forth. Russians and foreigners were encouraged to start factories by the grant of substantial privileges: protection from foreign competition, remission of taxes and other obligations to the state, above all the power to draft labor. A ukase of 1721 gave the manufacturer the right to buy whole villages for factory work; one of 1736 bound laborers forever to the factories in which they were working and granted the right to punish them "according to domestic usage."

FAULTS OF EARLY MANUFACTURE

Under the reign of Peter some 100 private factories were started, but of these most were feeble undertakings, created to enjoy privileges but unable to make an effective use of them. A report of 1727 showed that the products were dear and of poor quality; merchants petitioned to be allowed to import better goods at a lower price. The processes and implements had to be adapted to unskilled forced labor, and remained always the same; long hours were required to make up for low productivity. An account of woolen factories about 1750 shows them dark and dirty, with leaky roofs and earthen floors; some of the laborers had not even a whole shirt for clothing. In the latter part of the century the Empress Catharine, by abolishing many of the special favors, stimulated more enterprise and started a growth which continued after 1800.

MANUFACTURE IN 1826

A report of 1826 supplies a statement of the number of laborers employed in different industries which is particularly useful because it distinguishes different classes of labor; this will be made the basis for a description of Russian manufacture in the period of serfdom.

At the time when these figures were compiled the total population may be set, roughly, at 40 million. Obviously factory industry played a very small part in the national economy. The figures omit some of the smallest factories, which would make little difference if they were included in the aggregate. It is important, however, to realize that most of the manufacture in Russia at this time took the form of peasant *kustar* industry, which will be described later.

<i>Industries</i>	<i>Manorial Serfs</i>	<i>Possession Serfs</i>	<i>Free Serfs</i>	<i>Total</i>
Woolen	38,583	13,315	14,705	66,603
Cotton	247	2,239	44,535	47,021
Linen	1,483	6,629	18,720	26,832
Silk	658	1,065	8,481	10,204
Iron, steel	14,820	2,650	4,970	22,440
Cordage	167	33	2,303	2,503
Leather	539	2	7,460	8,001
Other	10,228	3,395	13,341	26,964
Total	66,725	29,328	114,515	210,568

The most significant feature of the table is its distinction of different kinds of labor, very unequally distributed in the various industries. In every factory the work was done by serfs, but by serfs working under very different conditions.

MANORIAL FACTORIES

Manorial factories belonged to nobles who got the labor force from their own serfs. The nobles wanted money to spend and sought it by arranging for the production of wares which could be sold off the estate. They managed to restrict the right of members of the commercial class to buy serfs, and were for a time the prominent representatives of the manufacturing class in Russia. The table shows that most of the laborers in these manorial factories were to be found engaged in making either woolen cloth or iron and its products. The cloth industry was still predominantly a peasant trade, it required some crude machinery and some little division of labor, without needing great skill or refined technique to produce the coarser products. For a time every large estate had a cloth factory, of which the ruins could still often be seen toward the close of the nineteenth century. The establishment of a factory was a summary process. A certain landlord, P., took the land away from his serfs, and ordered them to work in the factory which he had started; another, V., bought up in 1828 an abandoned country house and gathered in it a labor force made up of serfs collected from his villages in seven near-by provinces. Little is known about the conditions in these manorial factories. A report of 1803 shows that in some the laborers received no pay, in some they got pay in money or in kind. In all, we may be sure, they were punished if they did poor work

or did not finish the task set for them. A certain Mme. Voejkova, employing about 300 serfs in her manorial factory, tyrannized over them so heartlessly that, as recounted by an old man who had worked under her, they still could not think of her without horror and trembling. Every day she would have some ten or fifteen workers unsparingly punished for the slightest fault.

IRON

To a reader accustomed to the huge undertakings in which the manufacture of iron and steel is now carried on, it will seem strange to find these metals listed with woolen cloth as the leading products of servile groups working under private landlords. It may seem even more strange that in the period about 1800 Russia was able to export large quantities of bar iron, sold in western Europe in competition with home industries. Russian iron was well known in the London market by the name of the maker, Peter Demidoff, Strogonoff, etc.; and it is said that Russian landlords who engaged in the iron manufacture in the eighteenth century made princely fortunes. The explanation is found in the fact that the iron was produced by the most primitive methods in which crude labor and abundant raw materials (charcoal!) played the major part. The iron export diminished rapidly as western countries improved their methods. Serfs worked in the Russian industry under conditions approaching slavery, and under those conditions progress was not possible. The more advanced branches of metal manufacture were carried on not in factories but by little groups of peasants working at home in the villages.

"POSSESSION" FACTORIES

"Possession" factories were those which had received from the government favors in the form of subsidies (land, buildings, money), and particularly in the form of labor: the permission to buy serfs even though the proprietor was not noble, and actual grants of serfs from the crown estates and from miscellaneous sources. Some of these possession factories were very large; Count Potemkin's cloth factory at Gluskow employed over 9,000 males, and other factories had a labor force considerably exceeding 1,000. The possession serfs were bound not to the individual

but to the factory; the proprietor was obliged to keep this in operation, and in theory was subject to supervision and regulation by the government. The semipublic position of these factories, which represented in fact the remnants of the policy of Peter the Great, has preserved a fairly definite record of conditions prevailing in them. Wages were low; the average *monthly* wage about 1800 may be put at 4 rubles, which would equal 6.40 rubles (\$3.25) of 1900 if account be taken of the change in the price of bread. These wages were reduced by truck and by fines; hours of work were long; punishments were frequent. In Vigel's cloth factory children began work at 10 years of age. They had to rise at 1 A.M. on Monday, 2 or 3 A.M. on other days, and work to 9 P.M., with allowance of 3 (winter) or 4 (summer) hours for meals and rest. The firm of Jakovlev, in the town of Jaroslav, had the largest linen factory in Russia, employing over 2,000 possession serfs. In 1803 these took advantage of the theory of state regulation to petition for an increase of wages; their representatives got merely a whipping. A deputation to the czar again in 1804 was similarly rewarded. Another deputation in 1805 was again punished by the knout. In 1824 wages were at last raised, and the working time was shortened. The history of these possession factories was a constant succession of labor disorders, repressed by the knout, by condemnation to the army, or exile to Siberia.

"FREE" LABOR

The expression "free serf" may seem to be a contradiction in terms. It is used to describe a person who was by status a serf subject to a lord, but who had made a bargain with his lord by which he paid a certain sum, *obrok*, in place of rendering labor. This process of commutation of customary labor dues for definite sums of money had been common in western Europe in the later Middle Ages (fourteenth century), and extended rapidly in Russia before and after 1800. It offered advantages to both parties. If, for illustration, a serf rendered forced labor which was worth to his lord \$10, it is quite conceivable that working freely for himself he might produce something worth \$20. Commutation of the dues for \$15 would then leave each party \$5 better off, the result of the release of a new spring of energy.

SUPERIORITY OF "FREE" SERFS

In manufacture the defects of forced labor became particularly apparent. Laborers who worked not in hope of a reward but in fear of punishment did as little work as they dared. They could be trusted only with the simplest tasks and the simplest instruments. It would be an entire misapprehension of the great possession factories to assume that they resembled in anything but in mere number of laborers the factories of the west. They were simply great groups of peasants, collected to work under a taskmaster, without power, without machinery deserving of the name, without effective organization. Both the manorial and the possession factories declined in importance in the first half of the nineteenth century. Even in Russia under serfdom the superiority of free contract to compulsion became apparent, and the "free" serfs formed a constantly larger proportion of the factory workers. The proprietors of possession factories found them to be not a privilege but a disagreeable responsibility. A law of 1824, passed at their instance, allowed them to grant freedom to their serfs. on approval by the government; another law, of 1840, facilitated further the process of liquidation. It is thought that half of these factories renounced forced labor of their own accord. They wanted to be able to introduce the superior machinery which was in use in factories employing free labor; they wanted the higher output which came with free labor; they wanted to be relieved of the sullen resistance and constant vexations attending compulsion. A typical illustration is that of a woman who had inherited a factory, had always to be appealing to the authorities to assist her in keeping order in it, and who now petitioned for permission to free the workers. It is significant that the cotton manufacture, which became the most important branch of industry in Russia, grew up from the start on the basis of free labor. Introduced about 1750 in St. Petersburg by Englishmen, it had no help from the state except the protective tariff, yet it distanced the other industries.

CONDITIONS OF "FREE" LABOR

We must not exaggerate the amount of "freedom" which crept into Russian manufacture in this period. The term is

always relative, and in Russia, even after 1861, it meant something different from what it meant in western Europe. In one of the biggest spinning factories in the province of Moscow, in which the work was done by laborers working under "free contract," there was an insurrection in 1844 which had to be repressed with the help of the army. The men revolted because they were not paid the full wage for which they had contracted; part of it was paid to overseers and to the village authorities. They lived still in buildings called "serfs' dormitories," named after the landlords of villages from which the men came. The most curious mixture of freedom and serfdom appeared in Ivanovo, the seat of a highly developed manufacture of textile products. The place and the people belonged to a great landlord, Count Schermetyeff. The manufacturers were serfs who made their contracts for buildings, machinery, and laborers, always in the name of their lord and under the control of his agent. He made a princely revenue, imposing fees on all these transactions, and extorting money from the serfs according to the wealth which they had accumulated. He would make the son of a wealthy serf pay up to 30,000 rubles to avoid a sentence to army service, a daughter 10,000 rubles or more for permission to marry as she pleased. The charge for complete emancipation was very high indeed. Some of the manufacturers who were eminent in the later period of capitalism traced back to a servile origin. The Morosoffs, prominent manufacturers in the latter part of the century, rose from a serf who started a silk factory soon after 1800, made wares of good quality and fast color, and prospered so that in 1820 he could buy his freedom for 17,000 rubles.

DIFFICULTIES OF MANUFACTURE

A Russian economist, Tegoborski, estimated that about 1850 the value added by the manufactures of the country was less than one-fifth the value of the gross product of agriculture. The value of the manufactured product per capita of total population was only 8.38 rubles (roughly \$6.50), not much more than half that of a central European country, Austria, and about one-third that of a western country, France. Yet the total which he cites was made up mainly of the products of peasant artisans and of village industries; the factories contributed the smaller

part. If the reader will review the scheme, in the chapter on the English Industrial Revolution, showing elements in the course of manufacture, he will realize how ill-prepared Russia was to succeed in this branch of industry. Raw materials it had in abundance, and labor which was cheap measured by the day wage. But most links in the chain were weak: means of transportation, credit and marketing organization, funds of capital, expert and resourceful leaders. While the Russian organization remained medieval, it could not possibly develop modern manufacture. A disadvantage not quite so obvious but really most serious of all was the narrow market. A population composed mostly of serfs, thinking themselves fortunate if they could keep body and soul together, presented very poor customers. The Russian, in a climate marked by severe cold, could afford per capita less than a quarter of the woolen goods bought by the average Englishman; his consumption of sugar was less than one-tenth of that of the Englishman.

CONTEMPORARY OPINION

In their judgment on the economic institutions of the period the Russians show some curious conflicts of opinion, to be explained by the fact that they were trying to reconcile their own conditions with those of countries which had progressed hundreds of years beyond them. So they received with enthusiasm the work of Adam Smith, teaching the benefits of trade and of individual freedom, while they still clung to local self-sufficiency and serfdom. The conservative preached the benefits of agriculture, and questioned the moral influence of factories at the very time when the government was taking every means to stimulate their growth. Haxthausen, the German author who has already been quoted in praise of the system of communal land tenure, opposed private factories and wanted manufacture carried on by associations of crown peasants working under the supervision of officials, a system much resembling that of the "possession" factories whose evils have been described. The Slavophiles would accept the factory only when its moral worth was proved, when it realized the principle "The manufacturer is the father, the laborers his children." One manufacturer actually wrote an essay to prove that his factory, at least, was a fine moral influence.

IMPERIAL POLICY

There can be no doubt that the imperial government paved the way for its own dissolution when it built up the class of factory workers, locally concentrated, trained to organization. The revolutions which overthrew the government of the czar in the early part of the twentieth century might have been indefinitely postponed if the government had had to face only a scattered and ignorant peasant population. Why then did the government of the czar establish prohibitive protective duties, give all kinds of subsidies, grant all kinds of privileges, to further the growth of factories? It was not that it lacked forebodings, but that it could not withstand the pressure of interested individuals, nobles and merchants, who sought their personal gain. Only to the ignorant peasant did the czar appear divinely powerful. Those near to the court knew that he was pitifully weak, an ordinary man surrounded by people who had selfish interests at heart, dependent on them for information and advice.

KUSTAR INDUSTRY

Before entering on the development of the factories in the period after 1861, it will be convenient to consider the peasant *kustar* industries. In passing through its medieval period Russia never developed a system like that of western Europe, in which craftsmen, professional manufacturers, collected in towns and supplied their products to the country districts immediately surrounding them. Russian towns were garrisons and places of administration, not centers of industry. What little manufacture existed was carried on in the country, for home consumption, on the estate of the landlord or in the home of the serf. Climatic influences played a part in developing a manufacturing industry from these crude beginnings. The short growing season, 4 or 5 months compared with 7 in the west, left the serfs with little to do for the larger part of the year. If they were to make a living they must find a productive use for this spare time. They employed it in part in supplying their own needs of clothing and other manufactured wares. An author writing in 1880 describes the domestic industry of a village in central Russia as he had seen it, a picture resembling that of the Colonial American "spinning-bee." The girls of the village would assemble in the evening,

from November on, in a warm room in one of the houses; the young men would gather with them, passing nuts about and singing. The girls would spin wool in the first part of the winter, would spin flax and weave linen in the latter part. They had not a spinning wheel, usually not even a distaff, but with a comb to cleanse the fiber would spin the yarn entirely by hand.

EXAMPLES OF KUSTAR INDUSTRY

This pleasant picture of a merry social gathering is true undoubtedly of peasants who were well-to-do, and needed merely to supply their own household requirements. But a large, perhaps the major, part of the country population had to take their industry more seriously. They must produce not only for themselves but also for an outside market, to supply the deficiencies of their agriculture; not only women but also men must work; and they must work day as well as night. Every locality had some appropriate raw material: flax, hemp, wool, fur, leather, clay, wood, iron. A German writer about 1800 describes the country people as manufacturing for sale shoes, slippers, boots, coats and other articles of clothing, furs, beds and coverlets, tables and chairs, "in short every imaginable thing." Particular regions became noted for their specialties. The village of Pavlovo on the river Oka (province Nijni-Novgorod) was in a region where iron was smelted, and took up the manufacture of locks. Before 1800 it had added the trade of knife-making, and about 1830 it was taught by a French merchant to make shears. The region became noted for its cutlery and hardware; many villages were engaged in their manufacture. The manufacture of nails, established in the seventeenth century in the village Uloma (Novgorod) became the major winter industry in 200 villages of the region. Scythes became the specialty of Chritonovo, pottery of other places, wooden spoons of still others, and so on indefinitely.

RELATION OF KUSTAR TO FACTORY INDUSTRY

Russia, unlike the west in so many respects, is peculiar also in the succession of its industrial stages. Its industry, before 1700, was based not on a class of professional craftsmen, but on an agricultural population pursuing manufacture as a by-industry. Then the factory, an exotic institution, was introduced ready-

made. The next step was a reversion, measured on the western scale. Factories spread the knowledge of manufacture in the districts about them, and built up competition among peasants working at home, either under merchant employers or more or less independently. Village industries grew up like mushrooms in a ring around the factories. The burning of Moscow at the time of Napoleon's invasion (1812) was an important event; it scattered merchants and workmen who had gained a knowledge of the new wares and processes, and used it to start a new industry in the home village. A petition from the Chamber of Commerce of St. Petersburg, 1823, complained that factories could not develop because of the competition of peasants, who paid no industrial taxes and obeyed no regulations, and (the usual charge against a competitor) who gave short measure and poor quality. There was a district check to the growth of the factories after 1840, due to the development of *kustar* industry. The number of workers employed in weaving mills declined, while the importation of cotton and yarn increased rapidly; peasant weavers were taking away the trade. They bought the yarn, wove it into cloth which they dyed or printed, and marketed it at the fairs. Some carried the product, mostly on their own horses, for over 500 miles; some went to a fair with three wagons full. It must be understood that power looms were not introduced into Russian textile mills until about 1850, so the peasants were in this regard on an equality, and had the advantage of superior initiative. With the development of improved machinery in the factories, power looms and cylinder printing machines, the balance was turned the other way. Yet even in the latter part of the nineteenth century more than half of the peasants engaged in industry on a small scale in the province of Moscow carried on trades which had been developed first in factories.

VARIETY OF PEASANT OCCUPATIONS

In 1900 some 7 or 8 million peasants were estimated to be regularly engaged in *kustar* industry; their products were valued at about 500 million rubles (say \$250 million). The ordinary peasant had to eke out the living from his land by some other source of revenue. Many left the village for part of the year, to work in a factory or to undertake some service; those who stayed at

a skilled observer who lived in central Russia and wrote about conditions before 1880, said that in his village the peasants who were not needed to cultivate the land were sailors in summer, dug gypsum at home in winter. In a nearby village the surplus peasants went to Moscow as carters in summer, wove baskets in winter. "Every single village has besides agriculture a by-industry, either a trade carried on at home or a migrant trade (*Wandererwerb*). Here the peasants work at home in the forest, they cut down, carry, and raft the wood, or they quarry stone or earths, or they are spinners and weavers, printers and dyers, smiths and locksmiths, tanners and curriers, saddlers and shoe-makers, hat- and cap-makers, tailors, candle-makers, brush-makers, cabinet-makers, cartwrights, spoon-makers, basket-weavers, potters, painters, or practise another trade. There the peasants go abroad as carriers or as workers on boats, in building, on railroads or in factories, as tailors and cobblers, coopers, servants of all kinds, as peddlers, veterinaries, and even as professional beggars." He estimated from the issue of passports and tickets of leave (good up to six months) that nearly half of the adult male peasants of his region were away part of the time, in earning their living; the number increased after a crop failure. They went all over Russia, even to Siberia and central Asia; they went into factories, to the cities, to other country districts, or made their living on the road.

KUSTAR INDUSTRIES IN CENTRAL RUSSIA

An idea of the nature and organization of the *kustar* industries may be had from statistics of the province of Moscow before 1880; figures of the number of villages engaged are lacking for some industries and the table following is merely an extract from the original.

<i>Kustar Industries</i>	<i>Villages</i>	<i>Establishments</i>	<i>Workers</i>	<i>Workers per Establishment</i>
Pictures	14	174	342	2.0
Cabinet work	87	708	1,979	2.8
Iron work	—	36	114	3.1
Pottery	—	121	452	3.7
Hooks and eyes	15	44	197	4.7
Copper ware	—	139	716	5.1
Brushes	16	150	835	5.4
China painting	—	37	313	8.5
Pins	6	10	163	16.3
Horn combs	14	53	1 020	20.0

CHARACTERISTICS

We have here a picture of little workshops, manned by members of a family or small cooperative groups, scattered all over the countryside. The workers were free from the prison discipline of the factory. They had lost, however, the economic independence which apparently many had enjoyed in their earlier development. Merchants had inserted themselves between the producer and his market, and the workers were helpless in the hands of these middlemen. Good enough to hold their own against the early factory, they had still all the faults of a small and primitive organization; they depended entirely on hand work, were slaves to routine, lacked knowledge and capital. The results were inevitable; they worked hard for a living. At Pavlovo the lock trade was still carried on entirely by hand, and every lock was individual, but the keys were ill fitted and the returns were desperately low. The smiths got up to work at midnight and worked stark naked until 9 at night, with pauses aggregating 3 hours for meals and naps. Working thus 18 hours a day, young and old, they were earning in 1879 not over 3 rubles (\$2.30) a *month*. The nailsmiths of Moma worked from 2 A.M. to 8 P.M., the pin makers of Serpuchow from 4 A.M. to 11 P.M. Other trades were not as bad as these, in which the competition of machine products seems apparent; and the long hours were alleviated by pauses, by frequent holidays (130 to 145 in a year, counting Sundays), and by the change to outdoor work in summer. Yet in the village shop of the period, as in the field and in the factory, the portion in life of the Russian workman was very scanty.

QUESTIONS

What were the occasion and character of factories established by Peter the Great?

What were the faults of the early factories?

What different classes of labor were employed before 1861? In what industry was each most important?

What were the occasion and character of the manorial factories? In what industries were they important? Why?

What were "possession" factories? How were the laborers treated?

Explain the term "free serfs." Explain their superiority to manorial and possession serfs.

Why did factory owners favor emancipation?

- Illustrate respects in which "free" labor was unfree.
 What were the obstacles to effective manufacture in this period?
 Explain inconsistencies in theory and policy.
 Explain the importance of village *kustar* industry.
 Give examples of *kustar* industry.
 Explain Russian contrast with the succession of stages normal in the west—handicraft, merchant employer, factory.
 Illustrate the extent and variety of *kustar* industry.
 What were characteristics of conditions of work?

READING

The Industries of Russia (St. Petersburg, 1893) contains 22 chapters on different industries and other chapters on wages and hours in vols. I and II, and chapters on household (*kustar*) industry in vol. III. Scattered accounts appear in books of travel and in periodical literature.

Domestic (*kustar*) industry. (Hindus, chap. 7, pp. 108-123; W. B. Steveni, The Village Industries of Great Russia, in *Contemporary Review*, March, 1922, 121.338-343.)

Peasant work in winter. (Palmer, chap. 17, pp. 234-248.)

Industrial cooperative associations. (Palmer, chap. 20, pp. 281-295.)

Town life and trade. (Palmer, chaps. 10-12, pp. 127-165.)

CHAPTER XXVI

Russian Factory Industry

ECONOMIC DEVELOPMENT AFTER 1861

Before the emancipation of the serfs in 1861, partly as a result of the Crimean War and the reforms to which it led, Russia passed through rapid changes in its business organization. From the founding of the first joint stock company in 1799 down to 1853 there had been formed 26 companies with a total capital of 32 million rubles. In the two years 1857-58, 47 companies were founded with a capital of 358 millions. The new companies were devoted mainly to the development of the transportation system. In manufacture the emancipation dislocated the labor system of the past and required a reorganization which lasted through a considerable period. Laborers who as serfs had been held to their task fled from the factories and the mines. The manorial factories melted away; in some cases they were bought out by peasants. Gradually the factory system was adjusted to the new conditions and developed on the basis of free labor. Reliable statistics are lacking, but it is estimated that the factory population grew three- or four-fold in the period 1860-1900. Russian manufacture continued, however, subject to the peculiar conditions inherited from the period of serfdom, and developed in forms different from those of western Europe.

WEAKNESS OF MANUFACTURE; REASONS

The weakness of Russian industry in 1861, the date of the emancipation, can be measured by the part it played in foreign commerce. The only important manufactures which the Russians could produce to such advantage that they could export them to foreign markets, in competition with others, were flax and hemp yarn, rope and string, and sacking; less important items among the exports were spun silk, sailcloth, linens, and coarse woolens. In the world exposition of 1867 Russia made a creditable show-

ing only in old domestic industries based on cheap raw materials and peasant labor. Factory products could still be produced only under the protection afforded by the distance from western sources of supply, and by the high rates of the customs tariff.

The Russians, entering late the stage of machine industry and borrowing its ideas ready-made from other peoples, showed the weakness of inexperience. It has been said, perhaps with some exaggeration, that the only native Russian invention was the samovar, tea-urn. Certainly the Russian manufacturers had to depend on foreigners for technical guidance; they got their experts first from the English, later particularly from the Germans, who entered Russia by the tens of thousands in the period before 1900, most recently from the Americans. Statistics will be supplied later to illustrate the lack of natives with a good technical or even with an elementary general education, to take the subordinate and intermediate posts in the Russian factory organization.

Comparable in importance to the lack of technical knowledge was the inability to cooperate effectively in modern business organization. Peter the Great had found the sharp class divisions which always attend a system of serfdom, and had intensified them by legislation which made still more definite the separation of nobles, merchants, and peasants. Those who knew well the Russian people in the nineteenth century described the divisions between classes and even inside classes as almost unimaginably sharp. Even after 1900 the proprietary class was pictured as in the position of feudal barons, separated by a social abyss from the salaried managers and technical employees. An official commission in 1886 charged that the owners of the great factories of central Russia were often ignorant of the business, took no active part in the management, worked spasmodically if at all, and lent themselves to useless extravagance.

RELATION TO AGRICULTURE

The characteristics of Russian factory labor will be the subject of somewhat extended discussion later. At this point in the survey attention need be directed only to the peculiar fact that the Russian factory worker remained in most cases still a peasant, still tied to the soil. Investigations in 1879-85 showed 94% of factory workers in the province of Moscow to be peasants, members of

some village community in which they paid taxes and from which they had a leave of absence. A considerable part of the population of the towns, even of the great cities, was composed of peasants. The great size and modern equipment of some of the factories must not blind us to the fact that manufacture was still in a sense a by-industry, carried on in combination with agriculture. Factory wages were affected by the outcome of the harvest; factories paid 10% to 20% higher wages in summer than in winter; many factories shut down entirely during the harvest season. The situation was bad from the viewpoint of the manufacturer, who could not count on a steady supply and permanent force of laborers. It was bad as regards the laborer, in that he was not solely dependent for his livelihood either on agriculture or on manufacture. Manufacture being to him merely the means of filling out an income gained mostly from the soil, he was a poor bargainer over against the manufacturer, and was made to submit to the low wages, the long hours, and the other wretched conditions which will later be described. The situation resulted in the manufacturer's shifting to the village the responsibility of making up a living wage.

STAGES OF FACTORY DEVELOPMENT

An acute German observer, Schulze-Gävernitz, distinguished four different stages of development in the Russian factory organization of this period. The first and most primitive had passed away, for the most part, before 1900. A small factory would be established out in the country to get what labor it could pick up from the peasants of the region. No provision was made for housing them. They would come bringing food for a week—little but black bread—and would spend Sunday at home. They would eat and sleep where they could in the factory, on the floor, on the work-table in a chocolate factory (!), wherever there was a vacant space. The labor force was very irregular; the manufacturer would engage 3 or 4 times the necessary number, and would still lack hands.

In the second stage, which became the most common form, the manufacturer employed laborers coming from a distance and staying a considerable time. These were mostly men, who left their wives and children at home in the village. This stage was

an improvement in that permanent quarters were provided for the workers, but accommodations were still primitive. Two shifts of men might occupy the same bunks; the kitchens were dirty, soup would be made in the wash kettle, and so on. To illustrate conditions the author cites a scene in one of the best known factories in Moscow where the owner, drawing a curtain, showed him a gigantic privy occupied by 60 or 70 workers of both sexes; it served as a common smoking and conversation room, and was often the playground of the children.

EXTENT OF PLANT

In the third stage, found in the more progressive factories about Moscow, particularly the spinning mills, the working force was composed not of single men but of married couples. An employer could get both a better quality of labor and a more permanent force if he made provision for lodging both the man and his wife. They slept in gigantic halls with hundreds of beds curtained off. The factory provided not only a hospital but a lying-in establishment, where children were born. Most of the children were sent back to the village, but those of specially valuable laborers were allowed to remain and were educated in a factory school. It is said that children of this class were able to learn in 3 or 4 months as much as the ordinary peasant could in 3 or 4 years; they were the beginning of a regular class of competent factory labor such as had been developed in western Europe.

To illustrate a factory of this kind the author described one which he visited, employing 6,000 workers and lodging a population of 20,000. It was established in the midst of a boundless forest. It included a spinning factory with four- to six-story buildings, sheds for weaving, a bleachery, printing and dye houses, shops for carpentry and metal work, immense warehouses for raw material; further, stone barracks for the workers, cottages for the foreign superintendents, retail shops, a bakery, a slaughterhouse, baths, a general hospital and a lying-in hospital, two churches, a school, and a fire department. All this and the forest about it were owned by one man.

The fourth and most advanced stage scarcely needs description, for it was that usual in western Europe. The plant was restricted to the factory proper; the workers were free to lodge where they

pleased. This stage was found in the large cities, particularly in the machine industry, but was still exceptional.

REQUIREMENTS OF CAPITAL

From the preceding description an obstacle to manufacture in Russia can be inferred which has not yet been emphasized, the need of great capital to establish a factory plant. The manufacturer must provide all the supporting services, warehouses, repair shops, etc., and must further provide the living quarters for his working force. A spinning factory was estimated to require 3 or 4 times as much capital per spindle as in England. The rate of interest was much higher in Russia than in western Europe and this intensified the disadvantage.

FACTORY LABOR

We return now to the subject of labor, to be considered in such detail as is merited by its economic and its social importance. Let it be remembered that the typical factory worker was a peasant, removed only one or two generations from serfdom. He still had what may be described as a medieval nervous organization. All observers were impressed by his capacity to endure pain and privation. The porter at the entrance door or the driver of the sleigh would sit quiet all night in a temperature well below zero Fahrenheit; women would wash their clothes through holes cut in the ice. Potters working in a temperature of 90°, stark naked, would carry their wares a hundred yards outdoors, in a temperature far below freezing, without putting on a stitch of clothing. These sluggish nervous reactions are at best negative merits; they imply a body hard to train to the quick response needed for the manipulation of machinery.

FAULTS OF LABOR

More serious still than the physiological was the mental and moral make-up of the peasant. Serfdom had trained him to subordination and to patience; these again were negative virtues. Serfdom had tended to repress rather than develop such qualities as ambition, foresight, thrift, initiative. "The unanimous judgment of the employers," wrote the Consul General of the United States at St. Petersburg, 1884, "is that the Russian laborers as

a class are idle, unreliable, and wasteful. They are intelligent and obedient, but these redeeming qualities shine forth only under the strictest control. . . . The principal causes of their degradation are drink, to which they are excessively addicted, ignorance, and the absence of anything like home life." Roscher, the German economist, commenting on the adage "Time is money," noted that in Russia the church towers seldom had clocks. The Russian peasant when he could afford it dearly loved to own a large silver watch, but it was for display and not for use. Trained to routine by the village life the peasants resisted any change, even for the better. When the proprietor of a large sugar factory, to improve the barracks where the men slept, built separate sleeping cots, they complained: "Are we cattle that we should be thus cooped up in stalls?" Andrew D. White, American ambassador in St. Petersburg at the time of the cholera epidemic of 1893, says that when the people were instructed to drink only boiled water or tea they answered: "If God had wished us to drink hot water he would have heated the Neva." Taking together all the characteristics of the peasants, they could not and they would not do their work with an efficiency comparable to that of the western factory worker.

LABOR COST

In spite of low time wages, the labor cost in manufacture and mining was higher than in an advanced country like England. Redgrave said at Bradford, in 1871, that Russian factories with two shifts, each working 75 hours a week, would not produce more than an English factory in which a single group worked only 60 hours; in Russia there were never more than two looms to a worker, and they ran at only two-thirds the English speed. Writing in 1866, possibly with reference to conditions under serfdom, an author reports: "I once heard it remarked by an ironmaster carrying on his trade in Russia that he would rather have 300 English workmen, at their high wages, than 2,000 Russians." An Englishman, Hughes, complained of "dear labor" as the cause of the high price of coal, when he was paying miners 1 to 1.50 rubles (\$0.75 to \$1.15) a week; the men came from the plow and hacked away any fashion at the coal. It was said that the iron produced in the Ural region in 1893 by 142,000 men could

have been produced in southern Russia by 24,000 and in Belgium by 11,000.

HOURS

The low rate of production of the worker was bound up, both as cause and effect, with low wages, long hours, and bad working conditions. Even the freedom of contract which in theory now prevailed existed for most of the workers and for a large part of the period only in appearance. The bad features of compulsory labor persisted when the peasant was forced into a factory which he hated, to work on terms which he was powerless to alter or to reject.

In the Moscow district about 1880, the working time was as follows:

in 55 factories	12 hours
48 factories	12 to 13 hours
31 factories	13 to 14 hours
9 factories	14 to 15 hours
2 factories	15½ hours
3 factories	18 hours

An extreme case was presented by a mat factory in another province in which work began at 1 A.M. and lasted to 11 P.M., with half-hour intermissions for breakfast and dinner. Such a schedule seems impossible, even if the workers slept night and day on Sunday and holidays, as they were said to do; and one is less ready to accept it as a fact because a large proportion of the workers in these mat factories were children, of whom many were under 10. If not a fact, it represented at least a limit toward which facts tended. A Russian author writing in 1869 said that factories in which men, women, and children worked 14½ hours a day were regarded as "model." In bakeries and some other branches the hours ran up to 14 to 16 and even more. In the latter part of the century the 12-hour working day became usual. Too often, however, the manufacturer, desiring to make the most of his expensive capital, arranged shifts to use the whole 24 hours, and divided the time between them in such fashion that effective repose was not possible. Examples are given below of the division of the day between shifts, the last plan representing the advanced practice of the best spinning factories toward the end of the century.

PLAN A

<i>Day Shift</i>	<i>Night Shift</i>
4 : 30 A.M. to 8 : 00 A.M.	8 : 00 A.M. to 8 : 30 A.M.
8 : 30 A.M. to 12 : 30 P.M.	12 : 30 P.M. to 1 : 30 P.M.
1 : 30 P.M. to 8 : 00 P.M.	8 : 00 P.M. to 4 : 30 A.M.

PLAN B

	<i>Shift I</i>	<i>Shift II</i>
First day	4 A.M. to 10 A.M. 4 P.M. to 10 P.M.	10 A.M. to 4 P.M.
Second day	10 A.M. to 4 P.M.	4 A.M. to 10 A.M. 4 P.M. to 10 P.M.

CHILD LABOR

Facts published in 1870 showed that children under 10 years of age worked in most factories the same long hours as the adults, up even to 15 and 17. The factory owners asserted that if they did not work there they would waste their leisure and ruin their health in the bad atmosphere of home! With the picture which they presented of the "bright and wholesome" factories should be compared the accounts by factory inspectors, published about 1880. They found tanneries in which the workpeople ate and slept in an atmosphere fetid with decomposing animal matter; a leather works which the inspector was absolutely forced to leave, coughing, and eyes running after a stay of 3 minutes; a large bakery in which the people slept on the tables on which they made bonbons and cake. The large textile factories were kept clean, but at such a high temperature that the workers appeared prematurely aged.

WAGES

Wage statistics are notoriously uncertain; we cannot expect to find in the Russia of this period figures as reliable as those now compiled, and even if we had them should find it difficult to make an exact comparison with other countries, since all the conditions in Russia were so different. But all the facts available support the general statement that the Russian factory worker received a time wage which was a mere fraction of that paid in western countries. The following table gives figures, from a good source, of monthly wages paid to adult male workers about 1885. Women

received somewhat over two-thirds of the man's wages in Russia, children somewhat over one-third.

	<i>Cotton Spinning and Weaving</i>	<i>Construction of Machinery</i>	<i>Hours of Labor</i>	<i>Pay per Hour</i>
Russia (Moscow) . . .	\$10.50	\$18 00	285	
England	32.00	34 00	235	× 4
Massachusetts . . .	41.00	51 00	256	× 5

The figures for the Russian wages are averages of the rates nominally paid, but these were subject to deductions which would make the real wages actually less. A Russian writer asserted in 1869 that in all the factories the laborers were not making a living; the frequent impositions so reduced the small pay that the workers were all in debt to their employers. Records of the period about 1880 show an elaborate list of fines: so much for climbing the factory fence, 1 ruble for going to the gate, $\frac{1}{2}$ to 1 ruble for lying down in the wrong place, 3 rubles for bad language, the whole day's pay for 20 minutes' tardiness. Factory stores, at which high prices were charged, were usual except in the large cities. A man leaving employment frequently lost the pay of 1 or 2 weeks, in many cases the pay of a month; in one factory he lost half of the total pay due him. Before 1886, when the government intervened to furnish some protection, the proprietors paid when they felt like it, in some cases once a year. More commonly they paid at the great festivals, from 4 to 8 times a year, and would sometimes give advances on the wages, but at a discount of 10%.

LIVING CONDITIONS

Conditions of life in factory barracks have already been suggested. The decencies of life, as they were rated in western Europe, were not regarded. Factory inspectors reported, about 1880, that in many factories they found no privies, and nowhere proper provision of them. In some districts the factory workers in summer left the barracks, which were hot and infested with vermin, for shelters outside which they built of boards and broken boxes. These resembled hen coops. They measured perhaps 6 by 8 feet and were less than 4 or 5 feet high, yet each would shelter two or three workers, who entered by crawling on their hands

and knees through a little opening. Over 100 of these would often be seen about a factory.

The condition of workers who lodged outside the factories, and who seemed in that respect to enjoy the advantage of independence, was in many cases actually worse. Russia was not prepared for the growth of large industrial towns, and was slow to provide such municipal services as street paving, removal of refuse, provision of water, and so forth. A sober observer, in noting the fact that a little girl was drowned in attempting to cross the street in the city of Kharkoff, 1885, says that there were many cases of the kind. It was asserted in 1869 that in 10 of the 12 industrial provinces the mortality was higher than in the worst quarters of London. Russia about 1880 was passing through the stage from which England had begun to emerge some 50 years before. A report on an industrial quarter of St. Petersburg stated that it was exceptional for a family to have a room to itself. One room might contain several families, crowded into bunks.

The food of the factory workers, whether they lived in barracks or outside, was the characteristic peasant fare, ill-suited to indoor workers. It consisted of a monotonous succession of black bread, cabbage soup, wheat or buckwheat porridge with beef fat, potatoes, sour cabbage with hemp oil, kvass (small beer) with cucumbers. On fast days, of which there were 190 in the year, the salt beef in the cabbage soup was replaced by herring, and the beef fat by hemp oil.

CONDITIONS IN CHLUDOWO'S FACTORY

A more definite picture of factory life about 1880 can be given by describing the fortunes of workers in the Chludowo textile factory in central Russia, employing about 2,500 hands. They were lodged in three-story barracks, damp, dirty, prison-like. A doctor reported that the allowance of air space was one-third of the normal. One room of 2,800 cubic feet capacity (such as would be enclosed, for example, in a room $20 \times 20 \times 7$) was occupied in work time by the resting shift of 17 persons, on holidays by 35 to 40. The people worked day and night in 6-hour shifts, a total of 12 for each. About one-quarter was aged 14 or less, another quarter 14 to 18. They were engaged for a year, and were not free to leave before its expiration, but could be dismissed

at pleasure, and were sometimes turned off without pay. They were paid in truck, and fines were so arbitrary and so heavy that a man might have nothing coming to him at the end of a year of work. The incidence of illness was inordinately high, and the percentage of injuries by accident was over ten-fold that current in Germany.

Mr. Chludowo, who had become a millionaire by his profits, was of a pious disposition, and had established a printing house to further the circulation of religious literature of the sect to which he belonged. When the prices of cotton goods fell, in 1880, he announced a cut of 10% in wages. The English superintendent fled; he had already been beaten once by the workers. The laborers asked for their discharge, which the proprietor refused. The governor of the province arrived with military, and got Chludowo to promise to keep wages at their former level. After his departure Chludowo announced that wages would be reduced 15%, and arrested the ringleaders of the opposition, who were kept in confinement 5 months until they were tried and freed. In January, 1882, the whole factory burnt down, and seven wagonloads of corpses of those who had been shut in the building to fight the fire were taken out.

GOVERNMENT REGULATION

The government awoke late to the evils of the factory system, and was slow to act in repressing them. In 1862, the year after emancipation, a commission which had studied the matter proposed regulations of the kind established in western Europe, affecting the employment of children, hours of work, housing, etc.; and proposed that manufacturers should compensate the worker or his family for injury or death not due to his negligence. Against the opposition of the manufacturers nothing could be accomplished. This was a period in which a man who had lost his hand in the machinery could be dismissed without a cent, in which the dependent families of men who had been killed at work might be given a few rubles as an act of charity. Factories were supposed to maintain hospitals and doctors, but in many cases evaded the requirement.

A law of 1882 was the first to approach at all seriously the

factory problem. It forbade the employment of children under 12 years of age, limited to 8 the working hours of young persons aged 12 to 15, and prohibited night work to those under 21. The most important part of this measure, however, was the provision of factory inspectors to watch its application. Russia had learned from the experience of other countries that factory regulations were utterly ineffective without a special administration to enforce them. So this new organization was important, even though at the start it was very weak; there were so few inspectors that each had an immense district assigned to him, and they could do little except to inform the government of evils which were too deep-rooted for them to eradicate. One inspector, with one or two helpers, had to cover a district larger than Great Britain. In time more progressive manufacturers, particularly those in St. Petersburg, came to favor regulations which would raise the plane of competition, and the police urged them as necessary to prevent the open outbreak of workers. The abuses of truck payment and fines were restricted.

IMPROVEMENT

An attempt to get the cooperation of manufacturers by the creation of factory councils in which they shared membership with officials was designed to improve conditions but had only slight results. Finally, in 1897, an act was passed of great significance. Previous measures had limited the working time only of women and of minors; this applied also to adult men. It restricted the working day to 11½ hours, on days before holidays and on days including some night work to 10 hours. It forbade labor on Sundays and on 14 (later increased to 17) festivals. The government itself found it impracticable, or, possibly, politically inexpedient, to uphold this reform; it was practically abrogated by a circular letter of the Minister of Finance (finance!) allowing unlimited overtime. The people at last accomplished what the government had been unable or unwilling to do. The revolution of 1905, in which the factory population showed itself a serious menace, led to a considerable reduction of the working time in the large cities. In Moscow, 1905, more than half the factories had (in form, at least) the 11½ hour day. In 1906 a little over one-

tenth continued on this basis; by far the largest number (71%) had a 9- or 10-hour day. Many evils remained to be corrected when the first World War broke out, but a competent German observer thought that at that time labor legislation was not far behind the western standard, and that the administration by about 250 factory inspectors was at least fairly good.

WAGES

The reduction in working time in the period 1880–1900 was attended by a rise in the rate of pay, and in many cases by an increase in earnings, measured by the annual income. An estimate based on figures in many different industries ascribed to the adult male worker a monthly wage of 20 rubles (\$15), to the female three-fifths as much. Prices were rising also, however, and there is a question how much real wages, measured in goods and not in money, increased. One index of greater welfare is furnished by the statistics of the consumption of sugar per capita. While the average Russian (including all classes) consumed only 2 pounds a year in the early part of the century, the figure had risen to 11 pounds in the period 1897–1902, and rose again to nearly 16 pounds for the period 1906–11. It is impossible to determine how this gain was shared among classes. This much is certain, that a considerable part of the factory workers remained on a desperately low level. In the revolution of 1905 there was a demand for a minimum wage of 1 ruble a day (\$0.51; the currency standard was changed in 1897) for a male laborer, unskilled, and 0.70 for a female, and it is said that in many manufactures of Moscow and St. Petersburg the *average* wage was less than half of that. Even if the earnings of the St. Petersburg factory workers as a class had risen by 1910 to 30 rubles a month on the average, a figure for which there is some evidence, obviously the greater number of workers must have received less than this average. A Russian author pictures the status of this class in terms of annual earnings as follows:

up to 400 rubles (\$200) a year: they remain single
 from 400 to 600 rubles (\$200–\$300) a year: most marry
 over 600 rubles (\$300) a year: they can have children.

This author asserted that a deficit was the regular thing in the budget of the St. Petersburg factory worker, covered by borrow-

ing where there was anything which could be pledged, borne by fasting when there was no other way out.

Conditions of life in the factory barracks improved in the period before and after 1900. The workers complained, "Horses in their stalls are better off than we," but the evidence shows a considerable reform in the arrangement of the sleeping quarters, and in the amount of space provided. In many barracks a room was still occupied by several families, but managers found that they could not keep the best class of labor unless they gave each family a room in which the members could sleep and eat by themselves, even though they still did their cooking in the common kitchen.

HOUSING

Conditions of housing in the large industrial towns, in which the workers lived in private lodgings outside the factory, remained very bad indeed. Building did not keep pace with the growth of the population. Rooms in the old houses were divided up, not only by vertical partitions reaching part way or all the way to the ceiling, but even by the insertion of new floors between the old (a practice used in the old-time Chinatown in San Francisco). One apartment was cited of which the ceiling was 3 feet high! Very few of these lodgings had the proper allowances of air. An idea of their character can be given by extracts from the reports of Moscow inspectors: "damp and incredibly dirty"; "when it rains the water stands two fingers deep"; "the ceiling is so low that a tall man hits it"; "the plaster is crumbling on walls and ceilings, and the holes are stopped with rags. There is a great deal of dirt, and a multitude of lice and bugs. The stove has fallen to pieces. The privies are in such a dangerous condition that children cannot be allowed to use them. All the tenements in the whole house were like that."

To indicate the nature of these lodgings it is necessary to use a special vocabulary. On a scale of diminishing desirability the lodging may be rated in the following terms: room, roomlet, nook, bunk. The first and last of these will be familiar to a western reader. Roomlet was a part of a room partitioned off; the term nook (German *Winkel*) may be used to indicate a smaller space protected only by a curtain. A typical group of the prole-

tariat of St. Petersburg, with 200 to 400 rubles a year to spend (\$100 to \$200) was lodged as follows in 1908 (figures give percentages of total) :

<i>Single</i>	<i>Families</i>	<i>Lodging</i>
5	—	Half bunk
20	7	Bunk
44	36	Nook
12	7	Half room
16	21	Room
—	21	Apartment with subtenant
—	7	Apartment without subtenant
4	—	Not specified

In Moscow, in 1899, roomlets were found housing 7 to 9 persons; they were let not only to families but to groups of strangers, including both sexes and all ages. A nook would accommodate a family of 4 to 5; the children slept with their parents or on the floor. A bed was sometimes used by different shifts, and in the course of 24 hours might take 4 or even 6 persons. Bunks ranged in width from 2½ to 4 feet, seldom over that, and often took 2 persons.

STRIKES

Conditions of work and pay and life such as have been described above might appear tolerable to the Russian peasant just emerged from serfdom. To the second and third generation of worker, able now to read and write, familiar with conditions in western Europe, educated in theories the complete opposite of those ruling Russian life, these conditions became anathema. Strikes against them became more frequent. These were sporadic and ill-organized. They were no longer repressed by the knout of the Cossacks, but were often broken by high-handed measures of the proprietors who controlled both barracks and factory, and who would turn off the heat and light, or would simply turn the workers out of doors in freezing winter weather. A Russian author writing in 1907 could assert that the rights of the factory worker were little more regarded than they had been in the '80's. In many factories workers were still confined to the factory premises; in one large Moscow factory they were allowed to go out three times a week, but were subjected to a public personal search on their return. Inside the factory the strictest discipline

was maintained. The foremen, of whom most had risen from the working class, tyrannized over the laborers, extorted "gifts" from them, still exercised personal violence. Arbitrary dismissal was still practiced and was pretty sure to follow an appeal by a workman to a factory inspector.

The position of the workers became stronger as more of them gathered in the large towns, living in private lodgings removed from the control of the factory owner. Strikes grew in number and importance. In 1903 the number of strikers reached an unprecedented figure, 200,000; in 1905, a memorable year in Russian history, the number was 10 to 15 times that. Students of Russian affairs could see already the writing on the wall, foretelling the fall of the old régime. The imperial government could not, of course, countenance an organization of the workers in the form of the western trade union, but tried to guide the development by establishing *starosts*, elders, in the factories, through whom the manufacturers hoped to be better able to control the workers. This organization was merely superficial. Under the surface a class feeling was growing strong, destined to find violent expression in the first World War.

RUSSIAN ORGANIZATION ABOUT 1900

An idea of the economic organization of European Russia about 1900 is supplied by estimates of the income derived from different sources of production. Figures are given in millions of rubles.

<i>Occupations</i>	<i>Rubles</i>	<i>Percentage</i>
Agriculture	2,738	45
Forestry and fisheries	326	5
Manufacture and mining	1,495	24
Transportation	531	9
Building	473	7
Trade	562	9
Total	6,125	

As these figures are based on the statistics of only a part of the country, they must not be compared with the total population; an estimate of per capita income, taking this fact into account, gives, as stated in a previous chapter, 63 to 73 rubles (\$32 to \$37).

An analysis in detail of the special branches of mining and manufacture gives the following results (figures in millions):

	<i>Net Yield</i>	<i>Rubles</i>	<i>Percentage</i>
Mineral industry		249	17
Factory industry		506	34
Fiscal manufactures		198	13
Handicraft		338	23
House industry		204	14
Total		<u>1,495</u>	

The manufacture of certain products (sugar, beer, vodka, tobacco, etc.) was subject to special taxation and could scarcely be regarded as a free branch of industry. The other factories contributed only one-third, roughly, of the total in the table above, and contributed to the national income a value actually less than that ascribed to the *kustar* industries carried on in little shops or at home.

FOREIGN TRADE

Evidence still more impressive of the relative backwardness of Russia in modern industry is furnished by the statistics of foreign trade in a year (1912) just before the first World War (figures in millions of rubles).

	<i>Imports</i> (Rubles)	<i>Exports</i> (Rubles)	<i>Imports</i> (Percentage)	<i>Exports</i> (Percentage)
Foodstuffs	138	740	14	56
Live animals	3	30	0	2
Raw materials and semi-manufactures	515	518	51	39
Finished manufactures	359	28	35	2
Total (including decimals)	<u>1,015</u>	<u>1,317</u>		

Some comment on the significance of these figures is pertinent. The very considerable excess in value of the exports, the so-called "favorable balance of trade," indicates that Russia was paying large sums in interest and dividends on money borrowed or invested in the country. It had every year to deduct from the national product, which in the aggregate was large but which seems pitifully small when divided up among the great population, a large amount to be shipped abroad, bringing no return.

The form taken by the exports is also significant. They were for the most part foodstuffs. In a country in which a large part of the people went hungry for a large part of the year, and in which famines were persistent, nothing better could be found

to pay foreign debts than food. When the tax collector came to the village the peasant had to sell grain to get money; the grain passed into the hands of export merchants and was shipped abroad; the government with the money from the peasant bought up the bills of exchange representing these shipments, and with the bills paid foreign bondholders interest on the immense sums which it had borrowed for military expenditure.

Finally, and with particular reference to the subject of industry now under consideration, the absolute insignificance of the item of finished manufactures exported is impressive. Finished manufactures made up only 2% of the exports, and were exceeded more than ten-fold by the manufactures imported. The tariff and other favors which had built up an extensive manufacturing industry had not made it strong enough to compete in free markets abroad, and had not relieved the country of considerable dependence on foreign sources of supply.

MANAGEMENT

At the end of the century there was still complaint that the native Russians were not prepared to organize and administer large-scale industry. The upper classes preferred government service; there was no real middle class; the lower class was insufficiently educated. An investigation in 1903 of establishments subject to the factory inspectors gave the following results, distinguishing the upper and lower ranks of factory administration:

	<i>Rank</i>	<i>Russians</i>	<i>Percentage</i>	<i>Foreigners</i>	<i>Percentage</i>
Upper	15,013	91	1,421	9
Lower	14,330	83	2,855	17

Of the individuals in the table above, the percentage of those who had had a technical education, implying study not merely in primary and secondary schools but also in institutions of collegiate grade, was as follows:

	<i>Rank</i>	<i>Russians</i>	<i>Foreigners</i>
Upper	14	40
Lower	14	29

In the lower ranks 265 were found, in the upper 97, who could neither read nor write.

The lack of effective native leadership was felt the more severely as the typical Russian factory was a large unit. Between the small shop and the great factory there was a dearth of undertakings of medium size; as the factory was not a native growth but an imported institution it was often a large undertaking from the start. Individual factories making porcelain, glass, rubber, cotton yarn, and shoes were among the largest in the world. Over half of the workers in textile factories were in establishments employing over 1,000 each; the four largest textile factories employed over 10,000 apiece.

In the period before 1900 the factories were reputed to return huge profits, from 10% up even to 50% on the capital invested. In the period after 1900 profits of this magnitude were exceptional. Most of the factories returned only moderate gains, some of them gave a net return below the average on industrial investments. Most of the gain, in any event, went to foreign stockholders, who got the benefit accruing from the low wages paid to the workers and the high prices charged to the consumers. The rates in the Russian customs tariff on manufactures were higher than those of any other country in Europe, and imposed on the consumer a burden which was felt the more as the per capita income was so small.

QUESTIONS

What were the conditions just before and after emancipation?

Illustrate and explain the weakness of manufacture then.

What was the relation of manufacture and agriculture? In what respects was this bad?

Distinguish four stages in the development of the Russian factory, with respect to character of labor and conditions of life.

How did the characteristic form of enterprise affect the requirement of capital? (Compare conditions in cotton manufacture in the South, as described in books by Melvin T. Copeland, T. W. Utterley, Holland Thompson, etc.)

What were characteristic faults of factory labor?

Illustrate and explain high labor cost.

Illustrate and explain length of working time; conditions of work.

How did wages compare with those paid in England and the United States?

What deductions were made from the nominal money wage?

What were the conditions of housing? of food?

Illustrate from conditions in Chludowo's factory.

- What did the government do to remedy evils in 1862? in 1882? in 1897?
What were the elements and limits of improvement after 1880?
What was the character of housing?
Distinguish grades in sleeping accommodations.
What was the reaction of the workers, and how met?
What was the relative importance of different branches of production about 1900? of different branches of industry?
How did per capita income compare with that of other countries? (See page 122 of this text.)
What do statistics of foreign trade show as regards the indebtedness of the country, its poverty, its weakness in manufacture?
Why was industrial leadership so important? Why so weak?
Who got the profits and who paid the costs?

READING

- The middle class. (Wallace, chap. 12, pp. 160-176.)
Industrial labor. (Palmer, chap. 19, pp. 265-280.)
Industrialism, socialism and liberalism, 1881-1904. (Pares, chap. 21, pp. 391-408.)
Nihilism. (Wallace, chap. 34, pp. 532-549.)
Socialism and terrorism. (Wallace, chap. 35, pp. 550-575.)
The industrial proletariat. (Wallace, chap. 36, pp. 576-602.)
The socialist movement about 1900. (Wallace, chap. 37, pp. 602-614.)
Difficulties and prospects, 1905. (Wallace, chap. 39, pp. 636-659.)
Faults of the imperial administration. (Wallace, chap. 24, pp. 325-345.)
The Zemstvo (provincial administration). (Wallace, chap. 32, pp. 491-509.)

CHAPTER XXVII

The Russian Revolution

REVOLUTIONARY MOVEMENTS

The Russian government, an autocracy in form but a bureaucracy in fact, invited revolution by its incompetence and its stupid selfishness. About the period of the emancipation nihilism developed, at first rather an intellectual than a political revolt, but changing into a militant socialism and then into terrorism. The czar Alexander II was assassinated in 1881. In the later decades of the century the movement spread among the intellectuals, particularly among students in the universities. To resist it the government employed a censorship of the press which merely drove revolutionary literature into underground channels, and a police widespread but corrupt and inefficient. Frightened by the revolutionary movements which attended the war against Japan, the czar established in 1905 a national parliament, Douma, but restricted its powers and soon subjected it to control. There is, indeed, good reason to doubt whether Russia was then prepared for a constitutional representative government, or could have such a government for many years to come. Some authors believed that if the monarchy had taken advantage of the enthusiastic patriotism shown by the people in the early years of the first World War and had introduced democratic reforms it might have saved itself. Actually it pursued a contrary course; refused to cooperate with the Zemstvo Union of provincial leaders; exasperated patriotic Russians by its obvious neglect of national interests. Protopopov, reactionary Minister of the Interior, is thought to have wanted a revolution in 1917, expecting to crush it and use it as an occasion to make peace with the Central Powers. After strikes and riots came the revolt of a regiment at Petrograd, in March, 1917, the beginning of an irresistible movement. Of 15 million men called to arms, half had suffered some casualty;

refugees numbering over 10 million were seeking the means to live; behind the lines of the army the people were starving.

THE BOLSHEVIKS

The course of the revolution was marked by the rapid passage of power from conservative to radical leaders. The first ministry, under Prince Lvov, stood for a parliamentary republic, but wanted it established in orderly fashion, and proposed to retain the capitalist organization. It was succeeded by the socialist ministry of Kerensky, which proposed social reforms but expected the people to wait for them, and meanwhile attempted to continue the war. The army was demoralized; the government was practically paralyzed. These conditions invited the rise to power of the extreme revolutionists, the Bolsheviks.* Soon after the March revolution a group of them, who had been living in exile in Switzerland, were given transportation by the German government in the hope that they might complete the disorganization of the country. In this group was Lenin, long prominent in the party and destined to lead it. Entering Petrograd (later Leningrad) early in April, he devoted himself to working against the government existing at the time, and to the spread of Bolshevik propaganda. The Bolsheviks promised to give the people what most of them most wanted, immediate peace and more land, without need of waiting for formalities. Adept in politics and organization, ruthless in method, the Bolsheviks obtained military control of Petrograd in October, 1917, closed a national Constituent Assembly which had met to reorganize Russia, January, 1918, and henceforth exercised what government there still remained. The Communist party (as the Bolsheviks now styled themselves) numbered at this time not over 25,000.

THE SOVIETS

Before the Bolsheviks had established themselves they had raised the cry, "All power to the soviets." A soviet was a council or committee. Institutions of this kind, framed by workmen

* The name, meaning "members of the majority," dates from 1903, when a congress of the Russian Social Democratic party was held at Brussels and London, at which Lenin's views on centralization in the new society prevailed. Members of the minority in opposition were termed Mensheviks.

to represent their interests, had appeared at St. Petersburg in 1905, and had risen to a position of great importance there and elsewhere in the early stages of the revolution of 1917. They would be elected by the workers in a factory or by the soldiers in a regiment to represent the group, and to provide something in the way of government and administration when the preceding organization had dissolved. The Soviet of Workmen's and Soldiers' Deputies in Petrograd exercised power parallel to that of the provisional national government, and an All-Russian Congress of Soviets met in June, 1917, to discuss the affairs of the country. Being self-appointed revolutionary committees their powers were vague but unlimited. Their membership was not fixed by any rules, and they could be combined, as illustrated in the examples above, to represent different groups and to perform various functions. They presented admirable material for manipulation by such able politicians as the Bolsheviks, and were chosen by them as stepping-stones by which they might attain power. The official title of the Russian state is still Union of Soviet Socialist Republics. The name and the shadow of the institution still persist, but the soviet, essentially democratic in its origin, has lost its substance. Both in politics and, as appears below, in economic regulation, it was discarded as soon as it had served its purpose.

DECLINE OF SOVIETS

The seizure of factories by workers' councils, soviets, was general in Russia in 1917. In some cases the new sense of independence and power stimulated the zeal of the workers and led to an increase in production. Obviously, however, [people of the caliber of the Russian factory operatives were not competent to direct the affairs of a complicated organization in troubled times, and the enthusiasm for work of the individual soon cooled.] A man was called "traitor to the interests of labor" if he worked more than a few hours a day. This experiment in syndicalism led in a few months to a decline to one-third or one-fourth of the previous output. The soviet system threatened to dissolve the whole economic organization. The crisis came early in 1918 when the railroad workers presented exorbitant demands. The Bolshevik government established a dictator over the railroads, made strikes treason, and reduced the railroad soviets to "consultative bodies"

which were not consulted. The outcome was similar in the factories, where the chaos induced by soviet rule led inevitably to a return to a monarchical form of organization.

The syndicalism of the soviets offended against the first principles of the Bolsheviks, who held to the socialism of Karl Marx, believing in the nationalization of the means of production and in national control of all the processes of production and distribution.* For the private ownership of capital they proposed to substitute state ownership; every worker was to be the servant of the state. A man who made a profit by the work of another was an enemy of society, getting something which did not belong to him, and was to be treated as would be a burglar or a forger in a capitalist society. "Money-making" was to be abolished, and for the system of pecuniary exchange was to be substituted state-organized barter, on terms fixed by the government.

APPLICATION OF SOCIALISM

A Supreme Council of National Economy was created at the end of 1917 to reorganize society on this basis. As rapidly as it could it took control of production, transportation, and trade, beginning with the large establishments. By the end of 1920 it had reached out to include all enterprises using power and employing over 5 workers, all without power employing over 10. The application of its control, however, was irregular; at that time it had assumed the management of some 37,000 enterprises, of which 18,000 had no mechanical power, and over 5,000 had each only 1 employee. It recognized no limits; in the Stradivarius String Quartet of Moscow even the viola and the 'cello were instruments made by Stradivarius and nationalized by the state.

DIFFICULTIES 1917-21

This experiment in socialism, the most stupendous the world has ever seen, taking account not only of the number of people involved but also of the unshrinking boldness of the plan, was initiated under very difficult conditions. The country was exhausted by war, but war still continued long after fighting had ceased in the west. Not until the latter part of 1920 was peace

* No attempt is made here to distinguish the communism of the early period from the socialism into which it developed.

concluded with Latvia, Lithuania, and Finland, and the civil war closed in Siberia and in southern Russia. Not until the year following was the blockade of the country by the western powers broken by a trade agreement with England. As a result of territorial settlements Russia had been shorn of regions of great importance in its industrial organization, Poland, the Baltic Provinces, and Finland. The problem of reconstruction would have been supremely difficult, even if it had been reduced to its simplest terms, and the reader must bear this fact in mind when he judges the attempt in this very period to establish political, social and economic life on an entirely new basis.

PERIODS OF DEVELOPMENT

In following the changes, and in relating to each other the course of events in different parts of the field, the reader may be assisted by a brief chronological chart, which is inserted here for reference.

<i>Period</i>	<i>Manufacture and Trade</i>	<i>Agriculture</i>
1917-20 War Communism	Centralized nationalization Prohibition of private trade	Elevation of proletariat Confiscation of surplus
1921-28 New Economic Policy	Decentralization; piece wage Partial freedom of trade Re-introduction of money	Grain tax Free market The scissors
1928-32 Five Year Plan	Purposive industrialization	Collective farms
1933-38 Later plans	Practical completion of socialization	Struggle with kulaks

SOURCE OF INEFFICIENCY

The first results of nationalized industry were disappointing. A commission reported in 1918 that efficiency measured by output was little over one-third of the estimated normal, and attributed this result to factors to which it assigned importance as follows:

44%	inadequate food
21%	insufficient discipline
19%	substitution of time for piece wages
10%	insufficiency of machinery and raw materials
6%	ineffective organization of labor.

FOOD

The first and most serious obstacle to efficiency was the shortage of food. Famine had been one of the main factors in the revolution; the distributing system had broken down, and recovery would at best have been slow. Actually, as will appear, the policy applied to the peasants had tended to stop the supply of food at the source, and had intensified the dearth. The shortage not only reduced the efficiency of a man at work, but, more important, forced him to leave work to hunt for the food which he could not get as a government ration. The railroad workers at a Moscow junction were absent ten days a month on the average in 1920; they ascribed it to illness, but the time was probably spent in search for food. Loss of working time in this way was the more serious as the working day had been shortened to 8 hours as a maximum, and to less than that in some branches of industry. Government regulation of hours should not, however, be taken too seriously. In the strain of this period of war communism it was impossible to realize the ideals of the legislators. The producers were urged to "work revolutionally," and there was a great deal of overtime.

LABOR

The Bolsheviks, of course, discarded the wage contract, and substituted for it public control of the income of citizens, fixing remuneration of workers by a complicated procedure of committees. Differences in the quality of labor were recognized, although the spread in wages of skilled and unskilled was much less than it had been in the past. In theory a man owed to society his best work, whatever he received, and in general his wage was fixed without regard to the results of his labor. It seems fair to assume that in the case of many individuals this relaxation of pressure led to a decline of zeal; the government certainly showed that it was convinced this was the fact by changing later, where it could, to the method of payment by results. The whole situation, however, was so chaotic that it is impossible to disentangle this factor from others; such accurate measurement of its importance as is suggested in the table of percentages above is specious.

CAPITAL

Later students of the subject would be inclined to ascribe much more importance than is indicated in the table to the lack of good equipment for production and distribution. Equipment had been depreciating, without opportunity to repair or renew it, ever since 1914. This was particularly marked in the field of transportation. Russia had in 1914 an insufficient supply of locomotives, but as they wore out, parts from some were used to mend others, and by 1921 the supply was reduced to one-fifth of what it had been. A traveler by airplane from Moscow to Königsberg saw great stretches of line stripped of its rails for use on other lines. So long as war continued (to 1920) the armies had, of course, the first claim on transportation. In the early part of 1920 it was estimated that only 40% of the needs of the factories were met by the railroads, and about this time an official complained that he could get only one or two trains a month to transport metal from the Urals or cotton from Turkestan. An American visitor to the Ural mines in 1922 found the shortage of machinery and tools "appalling." Lack of wire rope stopped the operation of mines; lack of boiler tubes stopped locomotives; lack of belting stopped factories. He saw two men turning a machine lathe by hand!

ADMINISTRATION

A share of responsibility, large but just how large it is impossible to determine, must be ascribed to the incapacity of the government to operate the huge machine which it had taken over—the Russian economic organization. It is not surprising that it did it badly; it is surprising that it did it at all. To run the economic machine the government constructed a great and cumbrous political machine. It is said that one out of four adults in Petrograd in 1920 was an official. The ratio of administrative employees to the total workers in manufacture rose from the prewar figure of 6.4% to 13.5%. Officials received very low salaries, but it is quite credible that the "surplus value" formerly taken out by capitalists as profits were equaled or exceeded by the payment of this over-large staff, leaving out of account the question of relative efficiency. Prejudice against "class enemies" brought a political

element into the economic administration; a tailor was put at the head of a metal works, a painter was set to run a textile factory. An elaborate upper administration terminating in *Glavki*, special administrative boards in control of different branches of production and distribution, proved incapable of managing itself, much less the industry and trade which it was supposed to administer. A committee of investigation reported in 1920 that many *Glavki*, so far from knowing the amount of merchandise subject to their control, did not even know the number and location of their warehouses, that no systematic accounts were kept, that pilfering and secret sales were not uncommon. Popular jokes ran to the effect that when a horse fell dead in a Moscow street 50 *Glavki* disputed the right to the carcass; that a man dragging a sack and asked if he was gathering wood replied yes, that he had got half a match and the sack held the government permits. Russia had not escaped from a bureaucracy in overthrowing the czarist government.

DECLINE

The total output of manufactures declined in the years 1920-21 to less than *one-seventh* of what it had been before 1914. The number of factory workers was less than half of the prewar number; millions had left for the country districts to get land or at least to get food. A factory operative worked less hours a day, less days in the year, and produced less in an hour of work. Early in 1919 the government had begun a vigorous movement to heighten efficiency, dissolving such remaining workers' committees of control as still existed, and extending the system of payment by results. The demobilization of the armies in 1920 raised a serious problem and led practically to a militarization of industry. The Bolsheviks had held always to the doctrine that every citizen owed his labor to society, but had previously allowed the individual to choose his occupation. Now they introduced and for a time maintained a conscription of labor, assigning a man a job at which he must work or starve. A Russian author remarked that they practically re-created the conditions of the eighteenth century, when the serfs were told off to work in one place or another. If any enterprise was in a critical condition, the government made it an "armored" or a "storm" or "shock"

undertaking, indicating by these war terms the intensity of the struggle, and endeavoring to infuse the war spirit into the workers.

An estimate of the decline of the national income in this period by Prokopovitch, formerly professor at Moscow and banished from Russia by the Bolshevik government, must, of course, be accepted with reserve; it would make the income per capita roughly \$52 in 1913, \$44 in 1916-17, less than \$20 in 1921. Such figures, even if they were accurate, would mean little in the disordered times to which they refer. More convincing evidence of the depth to which the Russian organization had fallen is afforded by the famine of 1921-22, in which the deaths were variously estimated at 5 to 9 million, a figure to be compared with 13 millions of deaths in military service of all parties to the first World War.

AGRICULTURE

Although in this survey of the early stage of the revolution attention has been given first to industry, the reader should be reminded that agriculture was still the mainstay of the organization, occupying nearly three-fourths of the population, supplying most of the food and a large part of the raw material of industry. Land held by the peasants had grown in extent by one-half since 1861, but the increase had not kept pace with that of population, the average holding had declined in size, and hunger for land was more keen than ever. Over half of the area of European Russia was still held by other than peasants, but of this vast extent the smaller part was fit for agriculture.

LAND SEIZURE

The redistribution of land to enlarge the peasants' holdings was the subject which, above all others, interested most of the people. The more moderate revolutionary governments of Prince Lvov and Kerensky fell from power largely because the proposals which they offered for the settlement of the land question were timid and involved delay. The Bolsheviks were bold. They invited the peasants to seize the estates of all large land-owners without formality. During 1917, while representatives of the different parties were bickering in Petrograd, the peasants

took the matter into their own hands, looting and burning the country houses, killing those who opposed them, and dividing the land among themselves in perfectly lawless fashion. The Bolsheviks confirmed these acts as soon as they had attained power in the fall of 1917. It should be noted, however, that Lenin and other leaders were, on principle, strongly opposed not only to individual property in land but also to such communal holding as was practiced in the *mir*, village community. In the society which they planned, all land was to be nationalized, and agriculture, like industry, was to be conducted in large-scale enterprises managed by the central government. For political reasons they were willing at the time to agree to a redistribution and equalization of landed property, but, as will appear, they were waiting only until they were strong enough to force their own ideas upon the people.

DISTRIBUTION OF LAND

Agriculture, like manufacture, had suffered seriously in the war, by the draft of men and horses, and by the wastage of equipment. Production was even more seriously affected by the revolution. The Bolsheviks relied on the support of the proletariat, and organized in the villages "committees of the poor," made up of peasants owning little or no arable, who took a prominent part in the seizure and redistribution of land and live stock. Practically all of the agricultural land was thrown into the melting pot, and practically all of it passed into the possession of peasants; the government reserved a little for experiments in collective farms. At the same time, a stream of migration from town to country, involving nearly 8 million people during 1917-20, and the demobilization of the armies, raised the number among whom the land was divided. The average amount of land (arable and other) measured per capita of the peasant population rose from 5 acres to 6 or 7; in most provinces the gain was only about an acre a head. Unfortunately the gain was distributed very unequally among districts, according to the situation of the large estates; more than half of the villages got no considerable amount, and the problem of correcting this local inequality was too big to be solved by the Bolshevik government. What the government could and did do was to encourage the process of equalization

among the peasants of any locality. Land was taken from the well-to-do and given to the poor, although again the characteristic vices of village government appeared and many unscrupulous persons with political influence got more than their share.

The outcome of this process was a great growth in the class of peasant farms with a cultivated area running up to 5 or 6 acres, worked by one horse. (Note that the figures here refer to cultivated, not to total, area.) The proportion of farms cultivating 6 to 11 acres remained about the same, while the proportion of families with no arable or with more arable and with more than one horse declined sharply.

EFFECT ON PRODUCTION

This redistribution of land had important effects on the production of food. The large estates, with relatively advanced methods of cultivation, had had in 1916 a yield per acre of rye and wheat exceeding that on peasants' land by more than half. Further, the landed proprietors and the well-to-do peasants, growing about half of the total grain crop, had contributed 71% of the amount sent to market; peasants with small holdings had consumed most of their grain in the family. The leveling of farm areas led to a decline in productivity per acre and per horse, and a sharp decline in the area planted with grain. Less food was grown and a larger proportion of it was consumed in the family of the producer.

SEIZURE OF GRAIN

The danger of an insufficient food supply, critical under post-war conditions and intensified by the break-down of the transportation system, was further heightened by socialistic measures of the central government. The Bolsheviks proposed to abolish private trade and substitute a system of distribution of goods under public control. The peasant, therefore, lost his former market for his products, except as he engaged in illicit trade, and he lost thereby the economic incentive to produce. He had not read Karl Marx, and showed no enthusiasm for social welfare to be furthered at his expense. The government offered him for his grain paper money which was depreciating so rapidly and would buy so little of other products as to make little appeal.

The government was forced to the policy of taking what food it could get, without compensation. A "food army" was organized; detachments of armed men with machine guns toured the villages, working with the committees of the poor to discover and appropriate concealed stores of grain. A veritable war began between town and country, in which both sides were bound to lose. Conditions culminated in the dreadful famine of 1921-22, the worst the western world has ever known.

THE NEW ECONOMIC POLICY

Ruthless as were the Bolsheviks in the application of their theories to the reorganization of Russia, even they had to recognize that they had gone too fast and too far. Agricultural production was diminishing to an alarming extent, and industrial production declined as workers left the factories in the desperate search for food. It is estimated that the towns were getting only a third of their former receipts of agricultural products, and that the villages were getting only one-eighth to one-fifth of the manufactured goods which formerly had reached them. Strikes in the factories, as a protest against the policy under which the workers were starving, became general, and a mutiny in the navy at Kronstadt was a threat which could not be disregarded. Announcement of the abandonment of the forced grain levies marked (March, 1921) the establishment of a New Economic Policy, commonly referred to by the initial letters Nep.

RETREAT FROM SOCIALISM

As regards agriculture, the fundamental change of Nep was the substitution for the grain requisitions of a tax in kind, which would leave to the peasant the surplus of his crop, and would encourage him to increase this surplus by permitting him to dispose of it in trade. Production was stimulated, and a larger part of the crop reached the market. The government, which for the moment had repressed its extreme theories of socialization, abandoned the attempt to elevate the village proletariat at the expense of other classes, and aimed to encourage the industrious and progressive peasant of the middle class. It allowed even the employment of wage labor, which to strict socialists was anathema, and the lease of lands for a limited period.

The government still retained the monopoly of foreign trade, and still carried on much the larger part of the wholesale trade of the country, but in less than two years over 90% of the retail trade of the country passed into the hands of private dealers. The government, further, recognized the need of a stable medium of exchange, and in a few years had reformed the currency and so given a firm basis for commercial transactions. The result of these measures on the condition of agriculture will be the subject of discussion later; if they did not actually bring plenty they did at least avert catastrophe, and permitted the government to devote attention to the reform of other parts of the organization.

In the field of industry as in that of manufacture *Nep* represented a retreat from the uncompromising socialism which the Bolsheviks had attempted to introduce. In the herculean task which they had undertaken it is not surprising that their policy should be marked by oscillations, first in one direction, then in the other. In the period of the soviets they had realized the evils of a government of industry from below, by the workers themselves. For this they had attempted to substitute a central control so extensive that it would have taxed the powers of a government far better organized and staffed than any revolutionary government could be. The demand for decentralization now became clamorous, within the communist party as well as outside its ranks. The new policy was a concession to this demand, to be followed later, when the Five-Year Plan was introduced, by another swing toward centralization.

DECENTRALIZATION

In manufacture the *Nep* resulted in a drastic deflation of government enterprises and government employees. The state still kept large factories under its control, but gave to their directors more power and responsibility than they had previously had. It endeavored to farm out the medium and small enterprises, making contracts with individuals who would assume the duty of directing operations and of procuring supplies with the assurance that they would be free to recompense themselves by disposing of the products in trade. Private individuals who took over enterprises on these terms found themselves in a difficult position. They had no definite legal rights, they were at a dis-

advantage in obtaining credit, in getting transportation facilities, in marketing their products. The share of private manufacturing industry in the total is estimated to have been in 1923-24 about a third, in 1925-26 about a quarter. As it is difficult for a nation to persist half-slave and half-free, so apparently it proved difficult to combine socialism and freedom of enterprise in a single organization.

LACK OF COORDINATION

The importance and difficulty of getting competent management in the technical control of industry had been recognized early, but the government was now brought to the realization that a still more difficult problem was presented in the strictly economic control of production, the coordination of all parts and branches of production so that the output of each should make its maximum contribution to the whole. The business of Russia before 1914 was an organic growth, in which by years of experience the different parts had been adjusted to each other, and the activity of each was regulated by standards which time had proved to be relatively trustworthy. The war and the revolution dislocated the parts and put inexperienced men in charge of the regulation of activities. The result was chaos. A factory would work up its whole stock of raw materials through the various stages without replenishing its supply, to find then that it must wait indefinitely before it could begin operations again. The flow of raw materials, of half-manufactured goods, and of finished products was not regulated with any consistency. An acute and unexpected shortage in some finished product might reveal the fact that chemicals necessary in its manufacture were lacking, or that machinery would have to be constructed out of metal which had not yet been smelted or mined. The forecasting of needs is a difficult but indispensable function in any advanced society. In the capitalist organization it is left to private individuals who are rewarded or punished according to their success; the results are never perfect but in ordinary times they come somewhere near the mark. In the early period of Bolshevik rule the forecasts were hopelessly astray.

The government gave particular attention to the shortage of coal, which had been an important factor in crippling industrial

production. Factories ready in all other respects had not been able to operate for lack of fuel to feed the boilers. The whole branch of the government charged with the provision of fuel was reorganized. The less efficient mines were closed, and the laborers employed in them were concentrated at mines which could be operated at lower costs. The transportation system, which had been in considerable measure responsible for local shortages in coal and raw materials, was decentralized to put power and responsibility into the hands of officials better placed to exercise control, and new rates were introduced.

LABOR

The decline in industrial output was, as has been already indicated, the result of many factors, and accordingly required remedies extending in all directions. As regards labor, the most pressing need was a supply of food in the industrial districts which would encourage factory operatives to remain at work. The best service which the government could render to the factories was the change in agricultural policy sketched above. The government recognized the futility of labor conscription, and abandoned the principle of compulsory labor, under which men had been treated like soldiers in an army. On the other hand, the government retreated far from the position which it had at first been inclined to take, that it would pay according to need and not according to results. The unhappy experience of the period of soviet domination showed that the people as a whole were not prepared to accept the public responsibilities which socialism imposed upon them. In 1921 the government introduced a new scale of wage payments, increasing the spread between the lowest and the highest from 1:3 to 1:5, and what was still more important, paying to any enterprise not a fixed amount to be distributed in wages but a sum which varied according to the output in the preceding month. A decree of September, 1921, determined that "issue of funds for wages must be made, not in accordance with the number of workmen engaged, but in accordance with the quantity of product turned out by the concern." This plan led inevitably to some injustice, since some workers might suffer by the fault of others, and a whole concern might be penalized for failures over which it had no control,

but at least it was a movement in the right direction in the fixing of responsibility. The stimulus to efficiency led to an increase in output which surprised even the authors of the plan.*

RECOVERY UNDER NEP

In the course of three years, 1921-24, the government re-organized the industrial administration from top to bottom, abolishing the old *Glavki*, and grouping the factories in trusts and syndicates. By the end of 1922 the fruits of Nep were to be seen in a distinct improvement of conditions, although many factories were still idle and many were working short time. The policy of concentration which had been applied to the mines was followed also in industry; small factories were closed, and the workers were drawn into the large plants, where equipment, methods, and organization were more effective. In one sense Russia remained on a war basis down to 1932. Only on rare occasions was there a sufficient surplus of food to permit the export of a portion of it to obtain foreign credits. But in 1925 there was an abundant crop, and by 1926-27 the industrial output had reached the prewar level. As industry revived, the government recovered a large part of the field of internal trade which Nep had opened to private individuals. According to official figures the share of private trade in the total fell from nearly two-thirds in 1922-23 to about one-quarter in 1925.

AGRICULTURE UNDER NEP; "THE SCISSORS"

The New Economic Policy, introduced in the spring of 1921, had relieved the peasant of the danger of having all his surplus crop taken from him. The grain tax now imposed was heavy, but burdened the peasant less than the combination of dues levied on him in the czarist period.

* The following table aims to picture the course of Russian manufacture before and after the war. Figures give in percentages, compared with the base year 1913, volume of output corrected to allow for the growth of population.

1870	27	1921	13
1880	30	1922	24
1890	42	1923	34
1900	80	1924	47
1910	89	1925	76
1913	100	1926	99

If the peasants in this period of Nep suffered less from exactions in the form of levies or taxes, they were still in a disadvantageous position. This was the period of "the scissors." The government fixed the prices both of agricultural and of industrial products. It made prices low for agriculture, high for industry. This spread in prices was likened to the two blades of a pair of scissors, which were kept apart instead of being brought together. A graphic chart of the movement of the two sets of prices looked, in fact, very much like a pair of scissors lying open. At the climax, in 1923, agricultural products would buy less than a third of the amount of industrial products which they had bought before the war. The government intervened, forcing trusts and syndicates to reduce their prices, and gradually brought the two blades of the scissors closer together, although not actually in line. The peasants had to sell their grain to the state at a price much lower than that ruling in the world market. The freedom of trade granted them in the beginning of Nep was restricted, and so they were forced to look to the state for almost all the manufactured and imported products which they desired: cloth, agricultural implements, kerosene, tea, sugar, etc. They had to reduce the consumption of these wares far below the prewar level, although it is probable that they found some compensation in enlarging their consumption of farm products.

LAND TENURE

The primary result of the revolution had been a great increase in the number of peasant farms, from 16 million in 1916 to some 25 million in 1927. That part of the peasant population which may be described as the lower middle class had grown in number, absorbing many of the landless proletariat and dividing among them the land of the larger holdings. This process of fragmentation threatened to render more difficult than ever an improvement in agricultural methods. The government endeavored to spread knowledge of better crop systems, and tried to introduce tractors; peasants who had been prisoners of war in Germany brought back with them a knowledge of better methods. Hindrances to improvement were the lack of implements and of fertilizers. The government estimated, 1928, that about 74% of the area of spring grain was plowed with wooden plows, that

44% of the grain area was harvested with scythes or sickles, that 40% of the grain product was threshed with flails or similar clumsy instrument.

Agriculture suffered, furthermore, from persistence of the strip system of land tenure, and from the frequent shifts in the possession of land to meet the demands of new claimants. The government was opposed, as said above, to the old communal system practiced by the *mir*; it forbade a communal redistribution more often than once in nine years, and encouraged withdrawal of individuals from the village group. It had not, however, enough trained surveyors to go far in its efforts to abolish the open-field system. The usual peasants' farm still consisted of about 16 separate plots, and in some districts of as many as 100; over 10 million acres were wasted in boundary strips; and an area many times that was left every year in unproductive fallow. In parts of the country the fields were on the average distant more than three miles from the village; an official calculated that a peasant had to walk every year some 1,200 miles to and from his work, 4 times as far as would be necessary if the strips were consolidated and rearranged. Any thorough reform of the old system required energetic interference on the part of the central government, and this was to come shortly.

RISE OF KULAKS

Just as the government oscillated in its industrial policy between strict socialism and mild capitalism, so in its policy toward the peasants it wavered in its attitude. It wanted to make them integral parts of a socialist system, but when faced by their refusal to cooperate it returned to acceptance of the former conditions of trade, wages, private rights to land. Nep marked, in agriculture as in industry, a retreat from the extreme of war communism. Nep gave what the government most needed at the time, sufficient food to support the people. The new policy, however, offended against socialist principles, and gave opportunity for the social development which the Bolsheviks most disliked and dreaded, the rise of the kulak class. After about 1925 the democratic tendency in the distribution of land was checked. There began an increase in the number of landless peasants, of horseless farms, and of larger farms in the possession of kulaks, who

used their superiority in the control of land, farm stock, and agricultural implements to force the growing proletariat into dependence on them. The government could not, for the moment, dispense with the contribution of the kulaks, who supplied most of the grain brought to market. It merely tolerated them, however, as useful for the time; it refused them a vote in the village soviet, taxed them heavily, and showed all its favor to the lower classes.

QUESTIONS

How had the revolutionary movement developed up to 1917?

What were the stages in the revolution of 1917?

Distinguish Bolshevik and soviet.

Explain the decline of the soviets.

What were the principles of the Bolsheviks?

Under what difficulties did they labor?

Distinguish periods of development, 1917-32, and the outstanding features of each in industry and agriculture.

What was the relative importance ascribed to different factors in industrial inefficiency?

How did food shortage affect manufacture?

What was the wage policy of the Bolsheviks?

Illustrate the shortage of capital.

What were the faults of administration?

What was the extent of decline? How was it met by the government?

What were the Bolshevik principles and policy regarding land?

What was the effect of the revolution on the distribution of land?

How did this affect the production of food for the market?

What were the nature and result of war communism applied to agriculture?

What were the conditions, 1921, leading to the New Economic Policy?

What were the features of Nep affecting agriculture?

What changes of Nep affected manufacture?

What is meant by coordination of production? How accomplished in a capitalist society? By the Bolsheviks?

What were the changes in Nep affecting labor?

What were the general results of Nep?

What was the condition of agriculture under Nep, after 1921?

Explain "the scissors."

What evils persisted in the agricultural organization?

READING

Among the many books on Russia since 1917, the one chosen here for supplementary reading is Calvin B. Hoover, *The Economic Life of Soviet Russia* (N. Y., 1931). Impressions of visitors are to be viewed with caution. The more serious histories, such as K. Leites, *Recent Economic Developments* (Oxford, 1922), James Mavor, *The Russian Revolution* (London, 1928), and Lancelot Lawson, *An Economic History of Soviet Russia* (London, 1932), 2 vols. (annalistic), are not easy reading. Sidney and Beatrice Webb, *Soviet Communism: a new Civilisation?* (London, 1935), 1,174 pages, gives a wealth of references which may be used to extend the study.

The liberation movement, 1904-12 (Pares, chap. 23, pp. 429-448.)

Rule of the Communists, 1917-25. (Pares, chap. 25, pp. 472-491.)

Land policy of Prince Lvov. (Hindus, chap. 12, pp. 203-234.)

Land policy of Kerensky. (Hindus, chap. 13, pp. 235-250.)

Land policy of the Bolsheviks. (Hindus, chap. 14, pp. 251-277.)

Principles of Bolshevism. (Hoover, chap. 1, pp. 1-12)

Agriculture to 1928. (Hoover, chap. 4, pp. 67-80)

Organization of industry. (Hoover, chap. 2, pp. 13-42.)

Productivity and investment. (Hoover, chap. 3, pp. 43-66.)

Internal trade. (Hoover, chap. 5, pp. 123-152)

Foreign trade. (Hoover, chap. 6, pp. 153-170)

The cooperatives. (Hoover, chap. 9, pp. 225-246.)

Position of labor. (Hoover, chap. 10, pp. 247-281.)

Social insurance. (Hoover, chap. 11, pp. 282-297.)

Planned economy. (Hoover, chap. 12, pp. 298-326.)

Agriculture after 1928. (Hoover, chap. 4, pp. 80-122.)

Appreciation of Bolshevism. (Hoover, chap. 13, pp. 327-348.)

CHAPTER XXVIII

Russia under Five-Year Plans

THE FIVE-YEAR PLAN, 1928

Not content with the tremendous task which they had assumed in their attempt to transform the political, legal, social, and economic institutions of the country, the leaders of the communist party proposed to remake the economic structure so as to change entirely the balance of different branches of production. The Five-Year Plan was a grandiose scheme to industrialize Russia. Considerations which led the Bolsheviks to this course were mainly political. They were convinced that socialism and capitalism could not exist alongside each other, either in their own country or in the world at large. There must be eternal war between them and one or the other must subdue its opponent. So long, however, as Russia was content to continue on the pre-war basis, with industry relatively undeveloped, it must remain dependent on other countries for its manufactured wares, buying them with a surplus of its raw materials. The situation did not present itself even as one of mutual dependence; the world could get along without Russia better than Russia could get along without the rest of the world; the long-continued blockade of the country had proved that. The hope of spreading the revolution in other countries was faint, so long as Russia remained the partner of capitalism by trade relations; and if the revolution was to be spread by force of arms, an agrarian Russia would lack the essential weapons in war with industrialized opponents. Further, there was at home always the specter of counter-revolution to trouble the Bolshevik leaders. The communist party remained a very small minority of the people.* The devoted

* Membership in the communist party, Apr. 1, 1930, was set at 1,700,000; the total population was then over 150,000,000. Before that date the proportion was considerably less; after it there was a tendency to allow an increase in membership.

adherents of the revolution, apart from the "intelligentsia," had grown up in the class of factory workers; the strength of the party remained still in that class. (The peasants, forming the great bulk of the population, did not understand socialism and were stolidly opposed to having it applied to their property; they joined the revolution to get land, not to have it taken from them.) Even the village proletariat, once they had obtained land, were tempted to become kulaks. The peasants were passive material, incapable of effective organization, but so long as they outnumbered the urban classes in such great proportion, they were a threat to the success of the revolution, hampering its progress even if they could not reverse its course. Every peasant diverted to industry represented so much political gain.

(In the economic aspect the industrialization of the country promised to afford relief from the pressure of population. Russia had land enough to supply abundant food, if only the land were cultivated properly. Cut up into a multitude of little peasant farms, it wasted resources which could be utilized if scientific methods of farming were employed.) A smaller population on the land would produce a larger supply of food and raw materials, and would benefit by the exchange of its products for the increased product of industry.

EARLY PLANS

Socialists picture capitalistic society, in which economic leadership is vested in private individuals, as exploited by these leaders for their selfish gain, with no consistent plan of development. In contrast they picture a society in which control is vested in leaders who represent the interests of the whole group, who can consciously choose the goal of social progress and deliberately plan the means by which it is to be attained. The early years of Bolshevism were occupied in the struggle for mere existence. As soon, however, as the government had time for anything but the needs of the moment it began to formulate plans for the future. (Lenin, in 1921, proposed a scheme for the electrification of Russia, and although this made so little progress that it was humorously called "electrofiction," the Plan Commission established to study it continued in operation, and devised a five-year plan for the development of metallurgy. It was not possible to

forecast conditions with any assurance until the currency had been stabilized (1924), but when that had been accomplished the government was able to budget economic income and outgo, and the next year published for the first time "control figures," fixing the output to be attained in every branch of production.

MAGNITUDE OF PLAN

The government, to consider the various possible lines of development, established an elaborate organization which for nearly three years studied alternative proposals and finally recommended the Five-Year Plan, which went into effect in 1928. The term of five years was chosen to give time for the extensive construction required, and to allow for one poor harvest, estimated to occur on the average at that rate of frequency. (The magnitude of the undertaking can be illustrated, however inadequately, by the fact that the mere statement of the plan required 19 volumes of some 500 pages each.) The reader must try to realize that the formulation of such a plan in the United States would involve the work of all our legislatures plus the work of all the managing boards of corporations engaged in mining, transportation, and manufacture, plus the work of representatives of agriculture, all to be coordinated and all to envisage a period not of a few months or of a year but of five years. (Never has the world known such an ambitious project.)

CAPITAL

(The plan was all the more ambitious in that it was to be executed without the help of foreign capital. Before the war Russia had depended largely on the outside world for the capital employed in its economic development.) In 1913 the foreign investment in the country, aside from loans to the czarist government, amounting to nearly \$2,000 million, was estimated at over \$1,000 million. Merely to reconstruct the economic system on its former basis, after the war, was estimated to require nearly \$300 million. A treaty made in 1924 with the British labor government provided for a foreign loan, and suggested the possibility that in this critical period of the socialistic experiment Russia might enter again into closer economic relations with the western countries, and enlist their help. The treaty was, however, repudiated, and

when Russia decided definitely on industrialization it did so with the prospect of having to depend entirely on its own resources.

The plan involved the investment of a vastly larger sum of capital than would have been needed merely to restore the country to its prewar condition. Estimates of the total capital, native and foreign, already invested and of the additional amounts required for the completion of the project are given below in round numbers, in thousand millions of dollars.

<i>Projects</i>	<i>1927-28</i>	<i>1932-33</i>	<i>Relative Percentage</i>
Manufacture	4	13	300
Central power	0.5	2.5	530
Railroads	5	8	167
Agriculture	14	19	136
Urban housing	7	9	141

These figures are of astronomical magnitude; the ordinary mind cannot grasp them or believe in their reality.*

COMPLEXITY

Yet figures of this overwhelming magnitude were derived by the combination of countless details, each of which had been separately estimated and provided for. Nothing was too small to be neglected when a plan was made for the future of 150 million people. Again the most effective illustration is a set of figures (p. 592), presenting estimates of consumption per capita in town and country, before and after the realization of the plan.

Obviously an increase in consumption depended upon the ability of the group to produce more abundantly than it had done in the past. The most hopeful aspect of the situation was the low level of productivity in Russia compared with that of other countries. The government believed that by intelligent direction it could raise this level rapidly. The success of the plan depended upon the rationalization of production. In industries subject to the control of the state the government believed that it could

* The figures are from G. T. Gringko, *The Five Year Plan* (N. Y., 1930), p. 60; they are given on the 1925-26 price level. Gringko was Vice Chairman of the State Plan Commission. In another place (p. 293) he estimated the total amount of capital needed for the realization of the plan at 86 milliard rubles, over \$40,000 million. For comparison, the total national income of European Russia (not of the whole empire), 1913, was estimated to be about 13 milliard rubles.

<i>Articles</i>	<i>Before</i>	<i>After</i>
Meat, kilograms, in towns	49.1	62.7
Meat, kilograms, in villages	22.6	26.4
Eggs, ^a pieces, in towns	90 7	155
Eggs, pieces, in villages	49 6	72
Cotton cloth, meters	15.5	21.3
Rubbers, pairs	0 29	0.38
Soap, kilograms	0 94	2.6

^a To illustrate the difficulty of budgeting such elusive items as poultry products may be cited an Associated Press despatch from Moscow to the *New York Times*, May 30, 1932: "For having completed only 1.4 per cent of the plan for egg collections for the first quarter of 1932, the director of the Consumers' Coöperative Society has been ordered prosecuted on criminal charges. Several managers of the Chicken Coöperative Trust were reprimanded for inefficiency."

lower costs by 35%, and proposed to share the gain between the industries and the consumers of their products, applying 24% to a reduction of prices, and 11% to reinvestment in plant.)

SOURCE OF CAPITAL

{ Where was Russia to obtain the enormous amount of capital necessary to reconstruct society on a new basis. The government could not borrow it. The people must make it. The Five-Year Plan proposed to keep the people still on short rations; industries ministering to consumption were to be restricted. The people were enlisted in the new movement as in a war for national existence, and those who understood its aims accepted it with extraordinary enthusiasm. They renounced the long-deferred hope of enjoying plenty and comfort, that the surplus energy of the society might be diverted to the construction of capital equipment—railroads, power plants, machinery, factories of all kinds. At the end of five years they might hope to enjoy the fruits of this industrial reconstruction; in the background of the Five-Year Plan was a fifteen-year plan, during the operation of which the people would enter the promised land. In the meantime they must continue practically on a war basis. }

INVESTMENT

With all the faults and failures which marked the history of the project, [the success of the government in diverting energy to the accumulation of capital can be described as nothing less than

amazing. The country soon surpassed the prewar standard of investment, and reached the point of devoting half and even more of the total national income to the supply of capital goods. It lavished on the instruments of production as large a share of energy as the belligerents in the war had devoted to destruction. The reader must bear this accomplishment in mind and give due credit to the spirit which inspired it, even while he recognizes the appalling waste of energy which attended the execution of the plan. The government was in years a mere infant, set to rule a colossus. It was more autocratic than czarism, with a few real heads in place of a figurehead. The leaders were men of extraordinary ability and energy, but they had to use what instruments lay at hand.

ADMINISTRATION

(The administration, hastily constructed, tended constantly to revert to a bureaucracy, and savage punishments for inefficiency could not supply the lack of a trained personnel.) An investigation, just before the plan went into effect, showed that of the managers of industrial enterprises one-third kept their positions only one year or less, and another third only two years; 3.5% of them had had no schooling whatever, 75% had attended an elementary school, 16% a high school, 9% a university. (Nearly half the members of managing boards of trusts and syndicates had had only an elementary education. The government made vigorous efforts to train engineers, and borrowed the services of experts from abroad, but was constantly hampered by the inadequacy of its technical service.) The report of an American engineering firm summarized the difficulties which it faced in Russia as follows: constant variations of plan; fear of responsibility; preference for talk over action; insistence on unimportant detail; lack of practical experience by Russian technicians; incessant changes of personnel.

LABOR

(In the field of labor, also, the leaders who sought to industrialize the country found a dearth of material. The supply of skilled workers was scanty; ordinary laborers were hard to train.) An American engineer in charge of the great power project on the

Dnieper River reported that he could teach men of 30 years, not those of 45 to 50; he had 48 locomotive cranes in operation, but for the first year was using half of them to pick the other half out of the ditch. Another American found at a mine in the Urals that Russian miners who had returned from England or America were 50% more efficient than the others, who preferred to hack away with a pick rather than to use a drill and dynamite. The statement in an official newspaper (*Izvestia*, Mar. 24, 1930) that the productivity of labor in the government mines was one-sixtieth of the American, is scarcely credible, but may well have been true of a poor mine, fitfully operated and ill equipped; to fasten the whole responsibility of inefficiency on labor would be manifestly unfair.

CONDITION OF LABOR

It is impossible to measure the material standard of the people in this period with any exactness. Some indication of conditions is afforded by the estimate of Colonel Cooper, the engineer of the Dnieper plan, that the average per capita consumption was one-tenth of the normal American. The peasants and the "white-collar" classes were distinctly worse off than before. Industrial laborers enjoyed a reduction of working hours to 8 and then to 7. The government introduced in 1929 a 5-day week, giving one day off in five to groups of laborers in turn; the object, characteristically enough, was not only to get the most out of machinery by keeping it always in operation, but also to break up the institutions of the family and the church. The gain was not so great as had been anticipated, and the laborers disliked the arrangement, particularly as it was accompanied by the extension of night shifts. The government showed far more interest than its predecessor in the health and social welfare of the industrial laborer, and aimed, as was said above, to raise his pay. Money wages, indeed, rose, and nominally (that is, according to official price lists) real wages rose also, but actually there were not enough food, clothing, and shelter to supply the wants of people who had money to spend. During the ten years following the outbreak of the first World War there was an actual decline of urban housing, as houses tumbled down and were not replaced; a census of 1926 showed very bad conditions. The concentration of workers in

industry, according to the Five-Year Plan, should have been accompanied by extensive building of dwellings, and the plan provided for it, but other needs appeared more insistent, and the building program did not keep pace with the growth of urban population. The model tenements, shown to visiting travelers, were mere samples of what should have been done on a large scale.

WASTE ATTENDING EXECUTION OF THE PLAN

Some facts by which to measure the results of the plan in industrial output will be presented later. In summary, the expectations of the promoters were in a few branches attained or exceeded. In most, and in some of the most important, the results fell far below those that had been projected. Yet even before the final results were known the leaders made the bold decision to attempt its completion in four years, terminating in 1932. This was not mere bravado; they had every reason to hasten this preliminary stage, that they might relax the pressure on the people by providing more goods for consumption. Some extraordinary projects were carried practically to completion, for example the Dnieperstroy power plant, designed to supply 800,000 horse power by a dam 132 feet high. Too often, however, a project, nominally completed, was found to render service far below the estimates of the administration. An example is that of a huge glass factory, described by Russian critics as "a model of improper construction," estimated at first to cost 1 million rubles, the estimate later expanding to nearly 12 million and the actual cost being unknown by lack of proper accounting; built on the assumption that it could use the local sand for raw material it was forced in fact to get its quartz from a source over 200 miles away. Similar, if less glaring, examples of mistakes in plan and execution have been frequently reported by reliable observers. The progress of the plan is hard to measure because bare figures of quantity, even when they can be accepted as reliable, furnish no proof of success. Too often the output of a factory, adequate in quantity, was so poor in quality that the venture must be counted a failure. A tractor or a typewriter is of little use if it will not operate and will not stand up in service. Rails which used to last 45 years could not be guaranteed for 5. (The per-

centage of waste products in industry was estimated by a foreign critic to exceed 25% and often to reach 50%.¹ An Englishwoman who held a place as an expert in the cotton textile industry said that a proportion of 80% of defective cloth was normal; goods were printed to conceal the defects, and Russian mothers had to use coarse prints for their babies' layettes. Convincing evidence of an awful misdirection of energy attending the execution of the Five-Year Plan was furnished by the very leaders of the movement, in criticism of their own efforts.

WAR AGAINST KULAKS

{ An essential part of the Five-Year Plan was an attack on the individualism of rural Russia, with its antiquated methods of production and its menace to the socialist principles of the Bolsheviks. In the period of the New Economic Policy, to assure a food supply, the government had been forced to retreat from the drastic application of its principles.} As soon as it dared, in 1928, faced by another crisis in the grain supply, it changed its policy to accord with its principles, revived committees of the poor and the compulsory grain levies, practically challenged the kulaks to a war to the death. As will appear immediately it had now, what previously had been lacking, substitute plans for the production of food which promised to relieve it of its former dependence on the kulaks. It forced these plans upon the people of the villages with a rigor which reached its climax at the end of 1929, when Stalin announced the policy of "liquidation of the kulaks as a class." There were assumed to be 5 million of these peasants who had reverted to capitalism. Many were killed, some with torture; many were exiled to lumber camps in the far north; many were shorn of their possessions. Again, however, the pendulum of Bolshevik policy had swung too far. The reaction of the peasants to the drastic socialization to which they were now subjected will be described below; it forced the government again to reverse its course. Stalin's article, "Dizziness from Success" (March, 1930), was a recognition that the time was not yet ripe for the entire incorporation of the peasants in the social system, although it gave no guarantee for the future.

While the government during the period of Nep had tolerated individualism in agriculture, it was developing plans for the

introduction of socialism, and made these plans part of the Five-Year project. True to Lenin's theories it desired to make agriculture into a "big business," conducted by the state. Natural conditions in Russia favored farming on a large scale. The immense stretches of level land invited a thorough mechanization of the industry. Great areas in the southeast, with a climate resembling that of the semiarid districts of the United States, would return crops only when cultivated rapidly and thoroughly by machinery. So long, however, as land was held in little farms made up of scattered fragments, a real reform could not be carried into execution.

STATE FARMS

The government had two alternatives to substitute for the individual agriculture of the past: state farms (*soukhhoz*), entirely socialized, and collective farms (*kolkhoz*), cooperative enterprises forming a transition stage between individualism and socialism. The state farms were described as "grain factories," and resembled the socialized factories in that the state provided all the instruments of production, organized and directed the labor forces, and controlled the distribution of the product. Early experiments in nationalized agriculture had been failures; the first state farms had not furnished food enough to feed the workers on them. With the growth of experience, however, with more effective labor and administration, and with an adequate supply of improved machinery, these farms became successful enterprises. The great field of their operation was the semiarid belt, with a rainfall of 10 to 14 inches, which could not be worked with peasant methods. It required deep plowing, selected seed, and above all speed in plowing, sowing, and reaping, that the crop might be harvested before it was spoiled by the hot dry winds. In this region farms were laid out, ranging in size from 100,000 acres more or less (say 10 or 12 miles square) up to the "Giant," measuring 40 by 50 miles and including over half a million acres. The farms were lavishly equipped with tractors and machinery of all kinds; nine-tenths of the personnel were mechanics rather than farm labor of the usual kind. The yield was well above that obtained by the peasants, in spite of the unfavorable climatic conditions; and the cost of production was estimated to be lower.

COLLECTIVE FARMS

The other less advanced form of socialized agriculture, represented by the collective farms, was based on cooperation. An old Russian institution, the *artel*, is evidence of the capacity of the peasants to associate themselves in group enterprises. In the midst of the war and in the following period one of the most hopeful features of the situation was the development of co-operation on a large scale to provide credit, to make purchases, and to facilitate sales. The Bolsheviks found in the cooperative institutions good stepping-stones to socialism, and made extensive use of them in war against purely private enterprise. In the later years of Nep they paid particular attention to the spread of the cooperative idea in the rural districts. They endeavored to get the peasants of a village to pool their labor and their farm stock for the cultivation of the arable in common, thus utilizing their resources far more effectively than under the old individualist system. The government established stations from which the villages of the surrounding region could obtain the services of tractors and of expert advisers. The Five-Year Plan proposed a great increase not only of the state farms but also of these collective farms, and in 1929-30, the period of the war against the kulaks, the government carried out a ruthless program of collectivization, without regard to the inclination of the country people.

COMPULSORY COLLECTIVIZATION

(The peasants were not prepared for such an abrupt change from the established system. Some asserted that they would rather die, some prayed for arms that they might fight their rulers. Rumors, as of old, swept through the country, exaggerating the evils to come: that all members of a collective farm were to sleep under one blanket, that all the children were to be branded, and so on.) The peasants could make no organized resistance, but they had one weapon which could not be taken from them. Those owning farm stock preferred to eat the animals rather than to share their services with others. The slaughter of farm animals was so widespread as to threaten serious consequences for years to come. The government pretended to stay its hand; Stalin's open

letter, "Dizziness from Success" (March, 1930), was a confession that the policy had gone too far, and a promise that peasants would not be forced to join a collective group against their will. It is said that 18 million copies of this letter were circulated, so great was the public interest in it. The result was a rapid decline in the number of collective farms in regions where they offered least advantage and were most unpopular. Taking the country as a whole, however, they continued to spread at the expense of individual peasant properties. The pressure on the peasants to join the cooperative movement continued, and actually the proportion of peasants nominally subject to collective farms rose from less than a quarter in 1930 to more than half in 1931. The government was determined, both for political and economic reasons, to incorporate the country people in its plan.

While the surface sowed to cereals in collective farms increased even beyond the government forecasts, the yield of grain fell far below them. The government could require the cultivation of a certain area, but not even the government could force the crop to grow. The main trouble appears to have been delay in getting the seed into the ground. The autumn sowings in 1931 were said to have lasted over two months, even to late November when the seed was wasted; spring sowings made in the last of May returned barely a tenth of what they would have brought if made in the first part of the month. It is impossible to determine how much of the disappointing results were due to the lethargy and passive resistance of collectivized peasants, how much to other causes. The slaughter of farm stock was certainly an important factor, delaying all farm work, and reducing the amount of manure available.

INDUSTRIAL RESULTS OF PLANS

(In mining and manufacture as in agriculture the results of the first Five-Year Plan may be termed a qualified success. In some important items (coal, oil, iron, steel) the product fell far below the amount projected. In some (machinery, electrical equipment) the product not only reached, but exceeded by a considerable margin the amount set in the plan. Likewise, in industries serving the consumer (textiles, paper, matches, sugar) the amount was sometimes only half of the results anticipated.)

On the other hand, in the manufacture of boots, of which 30 million pairs had been produced in 1913, the plan proposed for the years 1929–32 50, 60, 70, 80 million, and surpassed estimates in every year but one. The reader must, however, remember that against these figures of factory product must be set the rapid shrinkage in the output of village industry, and must bear in mind the huge population needing footwear.

The measure used in the preceding paragraph is merely quantity. If quality were taken into account there would have to be a deduction, certainly large and persistent. On the other hand it must be remembered that comparison is made not with the actual output of a base year but with forecasts which aimed to set the possible maximum in a society strained to its utmost efforts. The accompanying table, extended to include years to the beginning of the third Five-Year Plan, shows results attained in comparison with the year 1929.*

VOLUME OF INDUSTRIAL OUTPUT, IN PERCENTAGE OF YEAR 1929

1929	100	1934	240
1930	131	1935	296
1931	161	1936	385
1932	185	1937	429
1933	200	1938	477

TRANSFORMATION OF RUSSIA, 1928–37

[†] The main aims of the second Five-Year Plan, extending from the beginning of 1933 to the end of 1937, were set forth as (1) “the building of classless socialist society,” (2) “the completion of technical reconstruction,” (3) “a 2- to 3-fold increase in per capita consumption.”[‡]

(Whatever may be the meaning of a “classless socialist society”

* Figures, from an official Soviet source, are based on values reduced to prices of 1926–27. Crude value comparisons are worthless in view of the changes in purchasing power of the ruble. A western critic of Soviet statistics described them as incomplete and inexact, but thought that they were not falsified to any considerable extent. Statistics not satisfactory to the government were not published. He cited a census of population which made an unpleasant showing; it was not made public, and those responsible for it were sent to concentration camps or shot. A Bettelheim, *Les statistiques soviétiques, L'Activité Économique*, Apr., 1939, 5: 19, 22. Kingsbury and Fairchild, and Colin Clark, *A Critique of Russian Statistics* (London, 1939), reached much the same general conclusion regarding reliability of Soviet statistics.

this certainly is true, that never has a great society been so far transformed in breadth and depth, in a few years, as was Russian society in the decade covered by the first two plans. I have spoken of a "revolution" in medieval society, effected by the growth of towns, although the process of change lasted well over a century. The Industrial Revolution, even in its culminating phases, occupied generations. Russia was transformed in a decade. One author properly refers to the Arabian Nights to furnish a parallel. And the miracle still holds true even when one doubts whether the change was so absolute as the figures pretend, and suspects that the cloven hoof of capitalism was still concealed in the boots of some Russians.

STRUCTURE OF RUSSIAN POPULATION, IN PERCENTAGES
OF TOTAL

	1928	1934	1937
Wage workers and salaried employees	17.3	28.1	34.7
Members of collective farms and of craft cooperative societies	2.9	45.9	55.5
Peasants with individual holdings and individual craftsmen	72.9	22.5	5.6
Capitalist elements	4.5	0.1	—
(including kulaks)	(3.7)	(0.09)	—
Students, soldiers, pensioners, etc.	2.4	3.4	4.2
	100	100	100

DEVELOPMENT OF PLANNED AGRICULTURE

{ In contrast with the experience of the first plan the process of grouping the peasants in collective farms went forward, without serious interruption, and with results which on the whole were satisfactory. Except for one year of drought the harvests came close to the increased yield anticipated, the cereal crop averaged, roughly, a quarter better than in the preceding period, and at the close of the second plan returned a handsome surplus which could be stored for emergencies. The cotton crop rose to 3 times what it had been at the start of the first plan. This showing is the more remarkable as the rural population was being attracted into urban industry and was actually declining in number.

The paradox of increased product with diminished labor force is explained, of course, by the application of scientific method to an agriculture which had been woefully backward. The govern-

ment distributed good seed and artificial fertilizers. It established thousands of tractor stations, with personnel trained to operate and repair the machines. Aggregate tractor power far surpassed that of any other European country, and while it was still inferior to that of the United States the government was undoubtedly right in its assertion that a given horse power accomplished much more ploughing in Russia than in America. A combine harvester would accomplish in ten days what would have occupied 200 peasants for five weeks.

(The state farms were maintained as models, to illustrate the possibilities of mechanized agriculture; more than half of the employees were mechanics rather than dirt-farmers. Most of the arable lay in collective farms, which had grown to absorb over nine-tenths of the peasants, and in the grain regions almost all of them. For a time the government granted to peasants working on collective farms the right to private possession of their live stock, and the opportunity to cultivate individually bits of land rented from the group. But again, as in the past, it withdrew these concessions as soon as it dared (1939), and demanded rigid socialization of the village group; again, as in the past, the result was a decline in product. It met, in appearance at least, the hunger for permanent possession of the land, by issuing to each collective farm a special deed, transferring to it the use of the land "in perpetuity"; and bore heavily, in taxation and other ways, on the peasants who remained outside the collective group.

RISE IN INDUSTRIAL CAPACITY

(The aim of the second Five-Year Plan in manufacture was to push to the limit the use of electric power and the substitution of machinery for manual work; and to provide at home all needed raw materials, chemicals and equipment, so far as it was possible.) The results, pictured in the table above, showing nearly a five-fold growth in output between 1929 and 1938, are the more impressive when compared with conditions in the rest of the world, in which there was an actual decline.

Even in the period of the first plan Russia, with its huge population, had risen in rank among the countries of the world in the production of pig iron from the sixth to the second place, of machinery from fourth to second, of agricultural machinery

to the first place. The government claimed first place in the world, 1935, in the manufacture of tractors, freight cars and locomotives; it claimed 75 to 80% of the world's output of tractors and harvester combines. It claimed third place in Europe in the production of coal, second place in the generation of electricity and production of steel, actually first place in the production of machine tools. Critics will not accept these claims at their face value but cannot give any exact measure by which they should be discounted.

The government sometimes scolded its industrial administrators, complaining of the superior efficiency shown in other countries, sometimes boasted that in one line or another Russia equaled or even surpassed the best records of efficiency abroad. Whatever the truth in comparisons so hard to evaluate it is certainly true that if comparison be made not with other countries but with Russia itself, when the country only a few years before was only a poor Cinderella among nations, making its first faltering steps in industrialization, the progress was amazing. (Progress still remained irregular. The Soviet planned economy protected the country from business cycles harassing the capitalist world, but could not defend industry from the reaction of a bad harvest in 1936, and was subject to trouble peculiar to itself. "During the period 1937-38 the personnel of the managing grade was largely replaced in the heavy industries, and more particularly in the fuel and rail-transport industries; thousands of new men took the place of those who had been guilty of sabotage and had therefore been removed." This statement was made at the Party Congress, March, 1939. Purges of the sort mentioned did not indicate and did not promise enduring efficiency. Fear of savage punishment if they did not meet the government demands forced managers and workers of a factory to drive their machinery beyond a reasonable limit, neglecting overhead and repairs, and laying up trouble for the future. Industrial experts, who had formerly been given a privileged position, were degraded by Stalin, who reserved his favors for party leaders.

MOTIVES TO LABOR

(To stimulate efficiency the government had at its command an apparatus of propaganda unequalled in any other country. Abso-

lute control of education, of the press, of the radio and moving-picture industries, offered an opportunity, fully utilized, to appeal to the worker's patriotism, to his pride, to his sense of duty and regard for the general welfare. The appeal brought a response from some individuals, sometimes from whole groups. To stimulate the mass of the people to zealous and effective work it was not enough. In the long run the government had to employ the devices of capitalism to force or tempt each worker to do his best.

Fear of discharge was a threat which the worker could not afford to disregard. There were still interstices in the socialist organization in which the private individual, working on his own account, might make a living—if he could. He lacked the privileges of employees of the state, the rights to food, lodging, insurance, medical service, and so forth; the position was precarious. Still worse than discharge was deportation, to the forests of the north or the mines of Siberia.

Appeal to fear was used to check the excesses of malingering and sabotage. Appeal to rational self-interest and to the hope of advancement, the common device of the capitalist organization, proved also in the socialist state to be the most effective incentive to efficiency and progress. Piece wages, premiums and bonuses for superior results, became the common method of remuneration. Earnings were adjusted not to the fatigue and pain of toil but to the importance of the individual's contribution, to his "marginal indispensability."

STAKHANOVISM

In 1935 a coal miner in the Donetz basin, Alexei Stakhanov, proposed changes in working methods which were attended by extraordinary results. In place of the established rate of 7 tons of coal in a shift of 6 hours he is said to have cut 102 tons, and later to have doubled that record. It would be quite misleading to present this as the result of the zeal of an individual laborer, although the succeeding Stakhanov movement was inspired with a fervor almost religious in nature. Stakhanov merely applied the principles of "scientific management," insisting on the best equipment and on an auxiliary force of laborers so organized as

to exempt the highly skilled from minor tasks, and to enable each according to his capacity to contribute to the common result. The real significance of Stakhanovism, which spread from mining to manufacture and transportation, was the encouragement of suggestions from below of possible improvements to which the upper class of managers had been blind.

TRANSPORTATION

The wreck of the railroads during the first World War left to the Bolshevik government a transportation problem which grew constantly in importance as the program of industrialization was carried into effect. Factories must have raw material carried sometimes over great distances, and must ship their products to the countless villages which had been used to supply their needs by local industries. The growing factory population must be housed and fed.

The first Five-Year Plan had made only scanty provision for solution of the problem, and of the railroad mileage which it projected less than one-third was built. The second plan put the improvement of transportation in the forefront of its aims. It had an ambitious program for the extension of railroad mileage, the building of double track, electrification, the introduction of block signals and automatic brakes. Both these plans for construction and other plans for the provision of additional rolling stock fell behind, in some cases far behind, the expectations. Measured not by the hopes for the future but by the facts of the past the gain was considerable. Particularly encouraging was an improvement in the efficiency of operation. Average distance traversed, in kilometers per day, rose 1932-37 from 146 to 250 for locomotives, from 97 to 142 for freight cars; the mean effective speed of a freight train, in kilometers per hour, rose from 14 to 20.

Russia, for all its vast extent, had only 30,000 kilometers of passable roads, to be compared with the 600,000 of France. The second plan projected the construction of 210,000 kilometers, and raised the number of automobiles from 75,000 in 1932 to 580,000 (mostly trucks) in 1937.

Russia was well endowed with waterways but lacked connecting

links. The second plan provided for the construction of canals from the Volga to Moscow, and from the Volga to the Don, and for the improvement of the waterway from Moscow to the Baltic. A canal uniting the Baltic and the White Seas was completed in 1936. Most of the work of canal construction was done by convict labor.

THE THIRD FIVE-YEAR PLAN, 1938-42

According to the calculation of Soviet statisticians Russia's share in the volume of the total industrial product of the world rose from 3.1% in 1928 to 11.6% in 1935 and 13.7% in 1937. An idea of what had been accomplished and of the ambitious aims for the future, is furnished by the accompanying table.

ACTUAL OUTPUT, 1913, 1932 AND 1937, PROJECTED
OUTPUT FOR 1942

(Figures in million tons, except as noted)

	1913	1932	1937	1942
Coal	29	64	128	230
Oil	9	22	30	54
Cast iron	4	6	15	22
Steel ingots	4	6	18	28
Electricity (thousand million kilowatt hours)	2	13	36	75
Machine tools (thousand units) . . .	(?)	15	36	70
Automobiles (thousand units) . . .	—	24	200	400

Authors of the third plan hoped to achieve the extraordinary results projected by an increase in efficiency of labor in which the Stakhanov movement was to play a part. Gain was expected also from stricter discipline of labor, regulations, 1938, looking to that end and aiming also to bring responsible directors into closer touch with their undertakings, had contributed to a considerable increase in product. The third plan called for an investment in fixed plant of a sum nearly double that of the second plan. The giant factories which had been built had proved uneconomic. The new plants were to be smaller units, in locations carefully studied to save transportation charges; more and more of them were being established in eastern regions and in the Far East. The plan emphasized the need not only to reduce costs, but also to improve the quality of the product.

STANDARD OF LIVING UNDER THE PLANS

The first Five-Year Plan had frankly subordinated the interests of the consumer to the need of industrial transformation. The Russians were to tighten their belts and wait for their reward. The second plan proposed to give more attention to their needs, but was diverted from this end by the demand for military preparations, in view of the threatening international conditions both in east and west. The third plan, again, directed to heavy industry a large share of the new investments, and stimulated the output of producers' goods and munitions of war rather than those serving the immediate needs of consumers.

The effect of all these stupendous changes on the standard of life of the mass of the people cannot be stated with any certainty. An English statistician (C. Clark) figured that the per capita income of 1928 was below that of 1913, and was still below in 1934, but had grown some 4% under the plans. Reliable statistics of the cost of living were lacking. Statistics of incomes and prices gave no index of well-being; the consumer might have the rubles but might be unable to buy the goods he wanted because they were not there. A French author (Bettelheim), abandoning statistics for impressions, thought that the standard declined considerably under the first plan, rose slightly under the second. It is quite certain that the grandiose aim of the second plan, "a 2- to 3-fold increase in per capita consumption," was not attained; and that conditions changed for the worse in the period immediately preceding the second World War.

The critical weakness of the Russian organization in the past had been the low productivity of the vast rural population. The people of the country districts were wasting their time. A study of Russian agriculture, 1928, led to the conclusion that there was a surplus village population of some 9 to 25 or 33 millions of working age, according to the method of estimate. There was a "disguised unemployment" there actually comparable in amount to the industrial unemployment in all the rest of the world during the later depression. The Five-Year Plans did something, if not enough, to correct this condition. They provided full employment to the increasing group of industrial workers, when workers were being turned away abroad.)

SOCIAL SERVICES

A factor of improvement, hard to evaluate, but certainly considerable, was the great increase in public services offered by the government. To illustrate, in the first three years of the second plan it started street car service and a public water supply in 15 cities, laid sewer pipes in 21, built approximately 500 public baths. In place of the 20,000 doctors of 1914 it offered 87,000 in 1937. It was giving a general education to over 25 million children, over three times the number in attendance before 1914, and counting in adult and vocational schools was reaching nearly a quarter of the whole population. The percentage of illiteracy had by 1932 been reduced to 10.

In one respect, with all its efforts, it could not meet the needs of the time. Industrialization led to shifts of population which swamped the cities. In twelve years after 1926 urban population rose from 26 to 56 million, from 18 to 33% of the total. In many places the supply of housing was desperately inadequate.

QUESTIONS

What considerations, political and economic, led to the adoption of the first Five-Year Plan?

What plans had previously been framed?

Illustrate the magnitude of the plan.

What was the amount of capital involved?

Illustrate the complexity of the plan.

Analyze the process of investment, and illustrate its extent.

What difficulties appeared in administration?

What were the faults of labor?

What were the conditions of labor: income, hours, housing?

Indicate elements of success and failure in the execution of the plan.

What conditions led to the attempt at a "liquidation of the kulaks"?

What results followed?

What advantages did Russia offer to farming on a large scale?

How were they utilized in state farms?

Distinguish collective farms from state farms and peasant farms.

What results did the government achieve in the effort to force collectivization?

Contrast the results in area and in yield.

Summarize the results of the first plan in industry.

What were the aims of the second plan?

Summarize the results in comparison with the past, and with other countries.

Explain the improved results in agriculture.

What were the peculiar advantage and weakness of the Soviet planned economy?

To what motives did the government appeal to stimulate efficiency? Explain Stakhanovism.

What results were attained in transportation?

Compare projected output in the third plan with the preceding results

What can be said regarding effects of the plans on the standard of living?

Explain the term "disguised unemployment" as applied to Russia of the past.

What were the results in the provision of social services?

READING

Of the many books on Russia in the period before the second World War, that which I have chosen as the basis of supplementary reading is *Red Economics*, edited by Gerhard Dobbert (Boston, 1932). This is a symposium by more than a dozen writers, well informed and relatively impartial. Other references will be found in the list of authorities cited at the end of the book.

Susan M. Kingsbury and Mildred Fairchild present a sober and careful study of economic and social conditions in *Factory, Family and Woman in the Soviet Union* (N. Y., 1935). Students desiring to read further about the conditions of labor will find a sympathetic account in Joseph Freeman, *The Soviet Worker* (N. Y., 1932), one more critical in Andrew Smith, *I Was a Soviet Worker* (N. Y., 1936). Periodical literature is rich in material—on this last topic, for example, P. Haensel, "Labor under the Soviets," in *Foreign Affairs*, Apr., 1931, 9:389-397. P. Winterton, "Soviet Economic Development since 1928," *Economic Journal*, Sept., 1933, 43:442-452, sketches the history under the first plan; Freda Utley, "The Enigma of Soviet Production," in *Foreign Affairs*, Jan., 1941, 19 385-401, offers an impressive criticism of the outcome of the plans to date.

Appreciation of the Soviet experiment. (Duranty, in Dobbert, Introduction, pp. v-xxiv.)

The planned economy. (Chamberlain, in Dobbert, chap. 1, pp. 3-23.)

Soviet administration. (Jones, in Dobbert, chap. 2, pp. 23-50.)

Soviet economic leaders. (Poppelmann, in Dobbert, chap. 4, pp. 75-92.)

Manufacture. (Basseches, in Dobbert, chap. 5, pp. 93-110.)

Agriculture. (Auhagen, in Dobbert, chap. 6, pp. 111-133.)

Public finance. (Dobbert, chap. 7, pp. 134-155.)

Money, credit and banking. (Campbell, chap. 8, pp. 156-182.)

Communication. (Saller, in Dobbert, chap. 9, pp. 183-207.)

The distributing trade. (Roellinghoff, in Dobbert, chap. 10, pp. 208-224.)

Housing problems. (Schmidt, in Dobbert, chap. 11, pp. 225-246.)

Social problems and conditions. (Sessa, in Dobbert, chap. 12, pp. 247-269.)

Foreign technical assistance. (Cleinow, in Dobbert, chap. 13, pp. 270-290.)

Theory and practice of planned economy. (Tugwell in *Political Science Quarterly*, June, 1928, 43:161-187, Taylor in *American Economic Review*, March, 1929, 19:1-8; Bye, *ibid*, Supplement, 91-110 (discussion 111-130); Tuckerman, *ibid.*, Dec., 1933, 23:637-649.)

CHAPTER XXIX

Italy

ITALY BEFORE 1500

The reader must refer to other books for a narrative of the economic history of Italy before the nineteenth century. Reference has been made in previous chapters to the contributions made by Italy in the field of credit and finance in the Middle Ages. In that period Italian cities were the leaders of the world. The commerce of Venice and Genoa, the manufactures of Florence, the banking and investment institutions of those and other Italian cities, were unmatched in their time in northern Europe.

An excuse for avoiding a narrative of this history in an introductory manual is the extraordinary variety of the development. Account would need be given of contributions from the classical world, from the Byzantines, from the German invaders, from the Normans who settled in the south, from the church and the papacy, and then from all the city and territorial states among which the country became divided.

A better reason for the omission of this complex story is the fact that the economic achievements of the medieval period went to the benefit of the peoples of northern Europe, and had but little effect on the later history of the peninsula. Magnificent buildings and treasures of art were preserved to testify to medieval prosperity; the conditions which had vitalized economic activity disappeared.

CONDITIONS AFTER 1500

Trade with the Levant and the Orient had been the main source of Italian wealth. This was cut off at the roots as Turkish power spread in the eastern Mediterranean, and the geographical discoveries opened cheaper routes to the east. The Mediterranean, formerly the chief avenue to riches, became a by-water.

Less obvious, but of comparable importance, was the effect on Italy of European political changes. An earlier chapter has described the rise in western Europe about 1500 of modern states, inclined and qualified to pursue an aggressive foreign policy. Italy was not prepared for this transformation. Just as Germany had suffered from the craving for imperial power which had misled its kings, so Italy suffered from the establishment in the peninsula of the Holy See, the seat of the Catholic church. The popes, aiming at temporal as well as spiritual sovereignty, were not strong enough to unite the country under their rule, but were strong enough to prevent any other power from accomplishing this end. The country which had ruled the ancient world became now the passive prey of modern states. France, Spain and Austria fought for the opportunity to exploit its accumulated wealth and to establish in it their mastery.

The most obvious result was the subjection of considerable parts of the peninsula to foreign rule (Austrian in the north) or to princes of foreign stock (Spanish in the south). Less noticeable, but more serious, was the establishment everywhere of a militarist policy. The springs of enterprise were poisoned by regulations which hampered trade and enterprise in the interest of the treasury and the army. The reader would scarcely guess (unless by chance he had read the novel *Anthony Adverse*) the name of the city which counted as the most flourishing in Italy in the late eighteenth and early nineteenth centuries—Leghorn. There, by exception, liberal regulations encouraged industry and trade, while in other parts of Tuscany, as in Florence, its capital, population declined and industries once flourishing had shrunk to almost nothing. An author who studied the public regulation of the grain trade in Italy in this period found in it the most hateful feature of Oriental despotisms, the exploitation of the needs of a helpless people by their sovereigns. This held true not only of the Spanish rulers in Naples, but also of the Medici in Florence, and even of the papal administration in Rome.

CONDITIONS AFTER 1800

Even after the conquests of Napoleon, which for a time seemed to promise national unity and a reform of antiquated political institutions, the peninsula reverted to its former condition. It

was divided into seven independent states, isolated from each other by prohibitive tariffs. Even inside the frontiers trade was not free, and wares might have to surmount half a dozen customs barriers in a stretch of 50 or 100 miles. Italy's only large river, the Po, could not be used effectively for transportation; between its mouth and Pavia there were five customs lines and 80 different stations at which the rights of visit and search were exercised. Wares destined for Milan were sent only part way up the Po, then up the little river Mincio and then overland, to dodge these barriers. Even with the aid of smugglers and of corrupt customs officials, a manufacturing industry of any importance was throttled in its attempt to reach an outside market. At home, manufacture was hampered by burdensome restrictions inherited from the past, and by the poverty of the rural population to which its wares must be sold.

Conditions were best in northern Italy. Yet there the most advanced province, Lombardy, had to support a dense population mainly from the soil, and had for its only important industry the reeling of silk from the cocoons. This was a process in which patient manual labor was the important factor. The raw silk was exported. Finished goods, in which Italy had once been preeminent, were driven from the markets of northern Europe by home manufactures or by imports from India and China.

The "factories" of which one reads were at first merely the offices of merchant employers, giving out work to cheap rural labor. Real factories grew up in time but in the silk industry they still used manual labor, with the simplest machinery and no outside power. They showed the characteristic evils of the early factory—inordinately long hours, pitifully small pay, abuse of child labor. Toward 1840 cotton spinning mills of the English type were introduced; in 1845 one had a steam engine to fall back upon when water failed, but one, with 4,500 spindles, still depended on men for motive power. Underpaid labor was the sole industrial asset.

CONDITIONS IN THE SOUTH

If conditions in the northern Italian plain seem backward, measured by European standards of the time, they were the best which the peninsula had to show. Continuing the survey south-

ward, conditions were not so good in Tuscany, worse in the States of the Church, worst in the Kingdom of the Two Sicilies with its capital at Naples. This last state, the largest in the peninsula, deserved perhaps the distinction of being termed the worst in Europe. Gladstone later called it "the negation of God."

The Spanish Bourbons who ruled it as absolute princes recognized no obligations beyond their personal selfish interests. A bastard feudalism had persisted until after 1800 and had bequeathed to the country an upper class which, like royalty, made what it could from the advantages of its position. Land overshadowed in importance all other sources of income, and almost all the land was held by great proprietors. In Sicily the clergy owned nearly one-third of the land, the crown nearly one-third, the nobles nearly one-third. The great mass of the population of the kingdom were landless laborers, working for bare subsistence on the property of others. Bad laws hindered effective use of the land, or the improvement of swampy and malarial regions. Cultivation was done largely by spade and hoe; plows were the simplest imaginable, drawn by a single animal or even by men.

Sicily had one mineral resource of importance, sulphur, which was mined by primitive methods and was exported to pay for the manufactures, for which the kingdom depended on the outside world. There was no native manufacturing industry of any importance.

ESTABLISHMENT OF UNITED ITALY, 1870

In the middle of the nineteenth century Italy presented conditions characteristic of the eighteenth, the seventeenth or even earlier: a country divided into political fragments, cut off from each other and cut up inside the parts by restrictions on trade, subject to governments which hampered the development of modern forms of enterprise by antiquated regulation and by stupid taxation. A dense population lived mainly by agriculture. There were industries in Italy, as a German author said, but there was no Italian industry.

Essential to economic progress was a clearing away of outworn political institutions. Able statesmen and devoted patriots realized the opportunity. Victor Emanuel II, proclaimed king of

Italy by the first Italian parliament meeting in Turin, 1861, had by 1870 united the peninsula under a national government. The economic development down to the outbreak of the first World War is pictured in the accompanying table, showing volume of production in percentage form compared with the base, 1913, and corrected to allow for the increase of population.

	<i>Agriculture</i>	<i>Manufacture</i>
1870	—	23
1880	77	29
1890	72	47
1900	76	61
1910	71	102
1911	88	99
1912	83	104
1913	100	100

AGRICULTURE; LAND TENURE

Down to the census enumeration of 1936 the bulk of the Italian population lived by agriculture; the census showed still 48% of the total in that occupation, to be compared with 29% in manufacturing industry. The figures of agricultural development printed in the last section are, of course, imperfect in showing only scattered years, subject to seasonal variations, but give on the whole a fair picture. There was a long period in which the rise of output was sluggish, not keeping pace even with the increase in the number of workers, then in the few years before the first World War a rapid advance.

In a country of such complex history and with such diverse physical conditions there was great variety not only in the crops grown but also in the systems under which they were produced. Taking the kingdom as a whole the outstanding fact was the concentration of landed property in a relatively small class, involving the assignment of most of the people in agriculture to the position either of tenants or of laborers. In parts of Italy there were true peasants, owning and working land sufficient to support themselves and their families. There was a far greater number owning little scraps of land, on which they could work in their spare time. The mass of the agricultural population gave their time, in part or in whole, to others, the proprietors of the land.

SHARE-CROPPING IN CENTRAL ITALY

In central Italy the prevailing tenure was *mezzadria*, share-cropping. Described above under the French term *metayage*, as it appeared in France in the early part of the nineteenth century, it was still in a large part of Italy, in the latter part of the century, the characteristic tenure. Based on custom which reached back for many centuries the tenure was adapted to a society in which subsistence farming rather than production for the market was the rule, in which social relations were still more or less patriarchal. Under those conditions the system had real merits. It promised on the part of the proprietor the needed capital, intelligent direction, and support in time of need; on the part of the tenant it offered sufficient incentive to industry. The base of the system crumbled as the market widened and as contracts expressed in money became familiar even in the rural districts. Then the parties to the enterprise would come to regard themselves as competitors rather than as partners, each would begin to figure how he might profit by a change in the terms. Before 1900 the system was gradually fading away. The landlord was the stronger party; as occasion offered he would demand a larger share of the crop or would throw more burdens on the tenant, or would take the land into his own hands, to be farmed by hired managers.

LATIFUNDIA IN THE SOUTH

The concentration of landed property in a small class of owners reached its extreme in southern Italy and Sicily. When the feudal domains and the church lands of the Bourbon monarchy were freed from the laws which had tied them down they passed to those who were already well-to-do or who enjoyed such political influence that they could exercise force or fraud to get what they wanted. Small proprietors were sold out for debt or taxes, and their holdings were added to those of the great. The evil of these conditions was intensified by the fact that many or most of the large landowners were absentees, who preferred to spend in the cities the income from their estates.

The common method of managing these latifundia was a lease for a short term for a money rent. The contractor generally sublet

the estate to other middlemen, of whom there were sometimes several strata. These conditions, much like those which long prevailed in Ireland, led to the same unhappy results. The middlemen sought to get the most they could, to give the least they had to; with no lasting interest either in land or people they exploited both. Of the agricultural laborers the men got \$.15 to \$.25 a day, a day which in summer might stretch out for 16 hours; the women got about half; the family might earn \$50 to \$80 in a year. A family often in straits for the simplest food, rarely touching meat except when a sick animal died; living in the "den of a beast," a single room without a window, sleeping all together on the ground with the pig and the fowls; clad in a "filthy heap of rags"—such a family was characteristic of conditions in southern Italy and Sicily down even into the twentieth century. The quotations are from a British report of 1871, but they are confirmed by all later accounts.

Economic conditions such as those described above made good politics impossible. The people of the south had grown up not merely to distrust government, but to hate it as the source of their unhappy condition. Some of them became convinced anarchists, holding that no government at all was better than the government they knew. Italy contributed, it is said, more than a third of the regicides who attempted political assassinations in the nineteenth century. An official report on brigandage, 1863, gave the wretchedness of the country people as its primary cause. The Camorra, a corrupt political ring in Naples, grew up from criminals who came to know each other in the Bourbon prisons. The Mafia, a group of criminal bands, terrorized the country, particularly Sicily, by blackmail and murder. Contributions from these sources to the gangsters and racketeers of the United States became notorious.

DEVELOPMENT OF MANUFACTURE

Statistics printed above show a steady and in some periods a rapid development of manufacturing industry in the new kingdom of Italy. A four-fold increase in per capita volume of output, from 1870 to 1910-13, is certainly impressive. Such a growth was possible only because the level of production was so very low at the start. There had been no manufacture in the south;

the distaff and spindle were the common implements for making yarn, and a contemporary (1854) expressed a doubt whether there was a spinning wheel in all Naples. Silk reeling, merely the primary process in manufacture, was the only important industry in the north; the cotton manufacture was still in its infancy.

Obstacles to the development of a modern manufacturing industry were serious. Capital was scanty, and was mostly in the hands of landed proprietors; land was the favored investment. Technical knowledge and business leaders were lacking. Silk and hemp were the only raw materials present in abundance. Machinery cost half as much again as in England, coal cost nearly double.

Labor alone was cheap. In the '70's women, making up most of the working force in the textile factories, got for a working day of 12 hours or more, the equivalent of \$0.12 to \$0.16. Children got \$0.06 to \$0.10, according to age. When American consuls reported on the condition of labor in Italy, in 1885, the government still had under consideration the prohibition of the employment of children aged less than nine or ten years. A law passed in 1902 forbidding night work of women and children in the cotton mills forced manufacturers almost to double the equipment of machinery to maintain their output.

CONDITION OF LABOR

Condition improved toward 1900, as will be shown. In 1885 they were still bad. American consuls pictured around Venice "a normal condition of hopeless want, of insufficient or unwholesome subsistence"; in the south, "With the Neapolitan working man and woman life is a perpetual struggle for existence." Most of the laborer's income must go for food, and still would not supply adequate and properly varied diet. The per capita consumption of sugar was but a fraction of that in the countries of northwestern Europe, and was less even than that of Turkey. The use of salt was restricted by a heavy tax. Per capita consumption of meat was about half that of the English workhouse pauper. The price of wheat was raised by import duties, and dependence on polenta, cornmeal mush, as a staple of diet was associated with the prevalence of a serious disease, pellagra. Malaria was an even worse scourge, particularly in the south, where whole

districts were so ravaged by it that laborers were afraid to sleep in the open country and walked many miles to their work.

For the great mass of the people the "iron law" of wages appeared to operate; they got a bare living. Income levels for all except the fortunate few at the top were low. In the royal universities only professors of the highest grade received salaries exceeding \$1,000 by a small margin. Other professors received less than \$1,000, ranging down even to less than \$200 a year.

FAULTS OF THE POLITICAL SYSTEM

Inefficient government must bear a considerable share of the responsibility for these conditions. To the patriots of the nationalist period succeeded a generation of petty politicians. Extension of the franchise gave the vote to many quite unprepared to play their part in the operation of a democratic parliamentary system. When the Italian kingdom was established three-fourths of the population were illiterate. As time passed the condition improved, particularly in the north. In the south, even in 1931, nearly two-fifths were still illiterate, and the proportion rose to over half in the country districts. Obviously the people were ill prepared to assume the responsibilities of government. Elections were determined by government pressure, by actual bribery (the great Banca Romana owed its ruin in part to loans for this purpose), by corrupt bargains with local rings. The kingdom had inherited the debts of the member states, and more than doubled them by recurrent deficits. Money was spent lavishly and wastefully on railroads, on the army and navy, on an unhappy colonial venture (defeat at Adua, Ethiopia, 1896). The administration was inefficient and often dishonest.

PUBLIC FINANCE

Of the method of raising the needed revenue an Italian said that while other countries might have defective systems of taxation none had a system so immoral as the Italian. It was sharply regressive, that is, instead of taxing people according to their ability it laid the heavier burden on the poorer people. Direct taxes furnished the smaller part of the receipts. An income tax began at incomes of 400 lire, say \$80, but its worst feature was the systematic evasion by the well-to-do, of whom most concealed the

larger part of their income. They would resist attempts at collection by bringing political pressure on the officials, an employer might even lock out his workmen until the treasury compromised. The land tax fell with especial severity on small owners, of whom thousands were sold out every year. The council of a Sicilian commune, to raise funds to pay rural guards, imposed a tax on owners of *less* than 26 acres of land—the councillors all owned more. In this instance the tax was disallowed by superior authority, but it is symptomatic of conditions.

The larger part of the revenues came from indirect taxes on consumption. An import duty on wheat, \$.40 a bushel about 1900, raised the price of bread, which was still further raised by local dues; only large landowners, raising wheat for sale, got the benefit. State monopolies raised the price of salt, tobacco, quinine; other taxes reached sugar, kerosene, matches.

Burdened beyond endurance the country people of southern Italy and Sicily broke out after 1890 in open revolts. In bands of hundreds they entered and sacked the towns, wrecked the government offices, and were dispersed only when troops of the regular army were called in. In one place the crowd tore the tax collector from the police station, sprinkled him with oil, and burned him alive.

IMPROVEMENT ABOUT 1900

At the turn of the century conditions were distinctly improving. In the agricultural south an important factor was the increase of emigration, which relieved the pressure of population, and forced a rise in wages. In 1898 Italy for the first time headed the list of countries from which the United States received its immigrants. In the region of small cultivators, in the center and north, better methods, spread by government agencies, came gradually into use. Agricultural cooperation, started in the '80's and extended in the '90's largely under the influence of the Catholic church, relieved the little man from dependence on the village usurer, who formerly had exacted 4 to 12% per month. When labor organization finally was allowed by the government, after 1900, it spread rapidly in the rural districts, particularly in the north, and helped to improve the condition of the agricultural laborer.

Development was most marked in the field of manufacture.

The silk industry remained the most important, making Milan a rival of Lyons and supplying a fifth of the world's requirements. Alongside it the cotton industry grew strong enough not only to meet most of the domestic demand but also to export to neutral markets in the Mediterranean and the east. Earnings of factory workers rose and hours were shortened. Measured by western standards the result (say \$0.50 for a day of 10½ hours) is not impressive, but it was a considerable advance over the past. The growth in political influence of the socialist party forced the government to abandon its repression of trade unions, and to adopt a more progressive social policy.

As time went on the Italians had trained their own people to take the place of foreign managers, foremen and skilled workers, who had nursed Italian industry in its infancy. Dependent still on foreign capital, now largely German, they developed at home a source of energy which relieved them to a considerable extent from reliance on coal. The Alpine streams were nearly ideal in the volume and constancy of their flow, and by 1908 Italy had developed more applied hydraulic horse power than any other country in Europe. A chemical industry based on this energy had still to come, but the heavy industry had already grown to suffice for most of the domestic needs in steel, and in some special lines of mechanical and electrical products was able to hold its own in foreign markets.

Economic improvement showed its effects in public finance, which had so long been critically weak. The year 1900-01 offered the best balance which the country had enjoyed since the establishment of the kingdom; the year 1911-12 showed actual improvement of fiscal conditions in spite of a war with Turkey waged to establish Italian power in Libya, northern Africa.

CONDITIONS AFTER 1918; THE FASCIST REVOLUTION, 1922

The first World War brought to Italy an extension of territory in the northeast, but left unsatisfied some aspirations (Fiume, Dalmatia), and strained to the breaking point both the economic and the political organization. A weak government was unable to meet the problems of demobilization; it could not keep its promises to the veterans, it could not maintain order. As a re-

sult of inflation prices had risen four-fold by 1919, even higher by 1920. A Bolshevik revolution appeared to threaten when hundreds of factories, September, 1920, were seized by the workers. Meanwhile bands of young men, loosely organized in *Fasci* ("bundles," so-called from the bundle of rods carried by the old Roman lictor), had sprung up to defend the inherited order against the attacks of proletarian socialism. The Fascists gained the support of industrialists, afraid of their employees; of landowners, suffering from demands of their laborers and from actual raids on their holdings; of shopkeepers and others of the middle class; of demobilized soldiers and of the unemployed. The movement developed from social to political aims, from a defense of property to an attack on the weak parliamentary system, and demand for a "strong" policy at home and abroad. The "march on Rome," October, 1922, established the Fascists in power under their leader, Mussolini.

PRINCIPLES OF FASCISM

Fascism accepted many principles of the pre-existing order. In contrast to socialism it maintained (except as qualified below) private property, individual initiative, free competition. In contrast to liberalism, however, it refused to accept individual self-interest as a safe regulator of the activities of society. It exalted politics above economics. "All within the State, all for the State, none against the State." Both labor and property were affected with a public interest, they imposed duties. The only liberty recognized was the spiritual liberty enjoyed by the individual in the performance of his duty. The totalitarian state absorbed and expressed "all the energy, all the interests, and all the hope of a people." This state, to be effective, could recognize only a single party; class conflicts and political differences were to be dissolved and reformed within the party.

In this bare sketch of fascist principles attention may be directed to a few outstanding features. First, they embodied some admirable ideals, struggling for expression ever since the time of feudalism. Second, a revulsion against the weakness and faults of the old political system confided the realization of these ideals to a government unlimited in its power, and in which, as a matter of fact, *il Duce*, the leader, was absolute master. Third,

again as a matter of fact, this government, with all its professions of a new faith and a new order, must work with old instruments, must face the old conditions which the unhappy history of Italy had bequeathed to it.

The reader will find in other books an account of the elaborate organization in which the corporative state gradually took form. They are more interesting to the theorist than important to the student of economic development, and attention will be directed rather to matters of fact, to the economic results of Fascism.

TENDENCIES OF FASCISM

The new government did at least establish order, or such an approach to it as is indicated in one author's summary, that only Fascists could break the peace with impunity. The cost was high, not merely in the decline of individual liberty but even measured in money. The Fascist state, before the next great war, was spending on its police force over 1,000 million lire, 10 times the equivalent of the pre-1914 period, 4 times the amount spent by France in double the territory. It was, at least, worth much to be rid of the organized crime represented by the Camorra and the Mafia.

The government effected savings in some parts of its administration, particularly in the railroads, in which a swollen personnel had been giving indifferent service. It had, however, a lavish program of public works, and ambition to regain for Italy a place among the nations such as the history of ancient Rome suggested it might hold. Intervention in the Greek island of Corfu (1923), war against Abyssinia (1935) leading to the imposition of economic sanctions by the League of Nations, covert intervention in Spain (1936-39) marked an imperialist policy which subordinated all other considerations to the military. An effort to attain autarchy, economic self-sufficiency, reduced the level of production, while taxes grew constantly heavier. In percentage of the national income the tax burden was estimated to be in 1914, 13%; in 1926, 20%; in 1933, 29%; later even 35%.

The most vicious feature of the old tax system, its regressive character imposing heavier burdens on the poor than on the rich, was retained. Taxes on consumption, reaching commodities of

common use, continued to yield the larger part of the revenue. A new tax on agricultural income imposed in 1923 allowed landed proprietors to deduct as an expense payments to wage laborers and share-croppers, but refused a similar deduction to peasants doing their own work—they must pay a tax on the produce not only of their land but also of their labor.

AGRICULTURE

The weakness of Italy, measured against the great states of northwestern Europe, was the dominance of agriculture in its economy. The weakness of its agriculture was the concentration of land ownership in the hands of a few, and cultivation of the land in great estates. Tax statistics, unfortunately the best available source of information on the subject, showed (1927) that over 40% of the tax on agricultural land was paid by less than 1% of the owners; considering the evasion of taxes by the rich doubtless this small proportion of landowners held well over half of the total land. Most of those who paid tax owned mere scraps, "not enough to be buried in," as was said of some. Again, most of the land was not only owned but also operated in large blocks. Two per cent of the farms comprised over 40% of the area, 10% comprised over two-thirds of the total.

Fascism was strict in its respect for the rights of property, and did little to reform these conditions. Some land passed into the hands of the common people, but mostly in small fragments, merely adding to the number of dwarf holdings. Italy lacked still a considerable group of independent peasant proprietors, and the interests of the peasants were in fact injured as the government captured the cooperative organizations and made them a part of its political system.

A real improvement appeared in the decline in number of the depressed class of agricultural laborers. Their condition had improved in the years after the first World War, and in the early years of the Fascist regime. After 1927 the current set against them, wages (real as well as nominal) declined, the vicious practice of payment in kind spread, a large proportion of the class were reduced again to a struggle for bare subsistence.

While the number of laborers declined, the number of share-croppers rose by over a million, and their terms of service grew

worse. A "charter" defining their position, 1933, was framed in the interest of the landlords, who got labor subject to their direction and discipline at a cheap rate payable in kind. They could get more from the worker, forced by need to enter into a contract, than medieval custom would have enabled them to extort.

RECLAMATION; THE BATTLE OF WHEAT

Of relatively slight effect on the condition of agriculture was an ambitious and widely advertised program of reclamation. Italy had suffered for many centuries from freshets which tore the soil from the treeless mountains and spread it on the plain below, often so as to obstruct the run-off and maintain marshes, waste and unwholesome. Work which had been long in progress to remedy this evil was taken up by the Fascist government, and far-reaching plans to extend it were announced. The reclamation of the Pontine marshes, not far from Rome, was a sample of what could be accomplished; it offered new homes (1935) for 2,215 families. Yet that and other completed projects provided for a negligible fraction of the landless population, and the expense of the work forced the diversion of funds from it to objects deemed more immediately important.

For military as well as economic reasons the Fascists desired to make Italy more nearly self-sufficient. In spite of the large share of the people engaged in agriculture the country did not raise its own food; next to cotton and coal wheat was the most important item among imports. To remedy this condition Mussolini started in 1925 the "Battle of Wheat," designed to stimulate cereal production to meet all needs. The government organized an educational campaign to teach better methods of production, and raised the protective duty on wheat imports until it reached the level of about \$0.90 a bushel.

The results of the "battle," at first indecisive, appeared after 1930 to be a victory; wheat crops, 1931-35, were some 40% larger than those before the war, or those in the period 1921-25, and imports declined to a negligible quantity. The costs of victory were not less serious because they were concealed. The price of wheat rose to more than double what it was in primary markets, in Liverpool or in London. A large proportion of the working

class depended on bread as the mainstay of their subsistence. An Italian author estimated an added burden on the average family of this class of some \$29 a year, 10% of the earnings of the industrial worker, 18% of those of the agricultural laborer. The per capita consumption of wheat declined, but in falling back on other grains, maize (polenta) or rice, the Italian found again that in the country of their production he had to pay over double the price ruling in the open market of London. Serious also were the reactions on agriculture, particularly in the south whose soil and climate were ill adapted to wheat, and which offered much better prospects in tree crops and in animal husbandry. The only class receiving a direct benefit was that of the large landed proprietors, with a considerable surplus for sale. Even the treasury got but small returns from the high protective duties, as they reduced imports so far in quantity.

MANUFACTURE AFTER 1914

While agriculture in Italy persisted in its old forms, shaped to new ends by the Fascist government but with its serious problems still unsolved, manufacture rose to an importance formerly unknown, in forms borrowed from countries which had been the leaders in industrial development.

The table on a preceding page showed a rapid and fairly steady growth in the volume of industrial production before the first World War. The war added a new stimulus and furthered the development of large capitalist combinations. The Ilva company built up a great iron and steel manufacture based on ore from the island of Elba, comprising interests in shipping as well as in manufacture, and employing some 50,000 operatives. The Ansaldo company, of comparable size, had its own mines and hydroelectric plants, furnaces and factories, supplying the demand for munitions of war, ships, railroad material and automobiles. The Fiat and Breda companies shared in this new development of manufactures based on steel.

Significant also of the development of Italian manufactures in new fields was the rise of a native chemical industry, of which the great Montecatini company, employing over 20,000 hands, was the chief representative. Based mainly on the production of artificial

fertilizer (superphosphates, nitrates), it branched into the manufacture of explosives and dyes. The old textile industries grew at a less rapid rate, and silk declined both in relative and in absolute importance, but in its place the manufacture of rayon grew with startling speed.

Alongside the highly mechanized plants which characterized the new development the little shops and household manufactures of an earlier period persisted. A report of 1926 stated that half of the product of knit goods came from private homes, and that even in recent years the number of hand looms had increased in the silk manufacture. Italy had still so many industrial handicaps that it must rely on a protective tariff to shelter its manufacture, but had at least attained a partial independence of coal. The interconnection of its hydroelectric stations enabled it to send current south from the Alps in the summer, north from the Apennines in the winter, and furnished power estimated (1929) to be equivalent to 20 million tons of coal a year.

CONDITION OF THE INDUSTRIAL LABORER

The Fascist government abstained in general from a direct share in industrial enterprises, but kept a strict hold on their activities to realize its ideal that all should serve the interests of the state. Strikes and lockouts were outlawed in Fascist theory; and the conditions of labor were determined either by national regulation or by local agreements in which the government had a decisive part. Disputes were referred at first to boards of arbitration, and later to the ordinary courts assisted by experts. Unbiased students of the situation were in general agreed that the scales were weighted in favor of the employer, and that labor was in an unfavorable position.

During the first World War, with its violent inflation, the Italian industrial worker had seen his real wage decline to half what it had been in 1914, but had recovered the lost ground in the few years after the war. Taking as a sample conditions in 1925, presented in statistics apparently reliable, most (over nine-tenths) of the industrial employees were working only 8 hours a day, and they averaged daily earning of \$0.65 to \$0.70, ranging up from \$0.35 in silk throwing to \$1.12 in the iron and steel in-

dustry.* Statistics of the Fascist period are open to criticism, and are complicated by a devaluation of the lira, but there seems no doubt that real earnings declined from that point. An American student (Schmidt) thinks that the purchasing power of hourly or daily wages, 1935, had shrunk by one-fifth, and continued to fall thereafter.

SOCIAL CONDITIONS

Social legislation for the benefit of the worker, in which Italy had long been so backward, had advanced rapidly after 1900, and had been modernized before the advent of the Fascist régime. Contributions of the new government, particularly its program of *Dopolavoro*, after-work, were widely advertised. The plan to afford the worker better opportunities to use his leisure, in recreation, study or travel, was wholesome, even if it had a political slant. Unfortunately the government took away with one hand what it appeared to give with the other. It had accepted the principle of the 8-hour day and the 40-hour week, but in practice allowed wide departures, so that the leisure time of the worker was actually impaired.

The government's ambition to make Italy a great military power, with its adventures in Abyssinia and Spain, involved serious waste in the effort to attain economic self-sufficiency and in the diversion to unproductive objects of its disposable funds. By 1936-37 military expenditures absorbed about 45% of the total; expenditures on social services had declined to less than 1%. The tourist might be impressed by some splendid buildings erected by the government, and would not realize that a third of the rural population were living in dwellings characterized even by the Fascists as almost or altogether uninhabitable, that hundreds of thousands of the country people were still living in huts of wattle and daub, or even in caves.

Measured by statistics of consumption the food rations of the average Italian, which had in the past at best been meager, declined still further. The International Labor Office at Geneva found (1936) that the average Italian did not consume enough calories for adequate subsistence, and among the countries which

* Italian figures translated into round numbers at the rate of 4 cents to the lira.

its survey covered found Poland alone in a worse position. The death rate declined under Fascism, as it had been declining in the preceding period, but the birth rate declined still more rapidly, in spite of a "Battle of Births" started by Mussolini to maintain the grandeur of his state. Italy entered the second World War with a people already depressed by the burdens laid upon them.

QUESTIONS

- What explains the prosperity of Italy in the Middle Ages?
- What changes about 1500 affected the peninsula?
- What were the political conditions after 1500? after 1800?
- What were the economic conditions in northern Italy; in the south?
- When was Italy united? Summarize the later economic progress.
- What was the occupational distribution?
- What was the outstanding feature of the agricultural organization?
- Explain conditions under which share-cropping was good or was bad.
- Explain latifundia in the south; describe conditions, economic and political.
- What were the obstacles to manufacture in Italy?
- Describe the conditions of labor: hours, wages, standard of living.
- Explain backward political conditions; illustrate the results.
- Illustrate faults of the tax system. Illustrate improvement about 1900.
- What were the results of the first World War? Explain Fascism.
- What were the principles of Fascism? in what political form embodied?
- Illustrate the action of Fascism, for better or worse.
- What was its policy toward agriculture, and the results?
- Illustrate with regard to reclamation; to the Battle of Wheat. Summarize results.
- What was the course of industrial development after the first World War?
- Illustrate the condition of industrial labor.
- Summarize the general results of Fascist rule.

READING

For the early nineteenth century the best reading will be found in Kent R. Greenfield, *Economics and Liberalism in the Risorgimento* (Baltimore, 1934); for more recent history and conditions an indispensable book is by Bolton King and T. Okey, *Italy Today* (London, 1901, or [enlarged] N. Y., 1913). Suggestions below are restricted to these two books, leaving the teacher to assign readings on Fascist Italy according to the books at his disposal.

A defence of fascism by a moderate will be found in L. Villari, *Italy* (London, 1929), or in his contribution to a symposium, *Bolshevism*,

Fascism and Capitalism, pp. 55-112 (New Haven, 1932). For present purposes the best descriptive account is in books by Carl T. Schmidt, *The Plough and the Sword* (N. Y., 1938), and *The Corporate State in Action* (N. Y., 1939), bibliography, pp. 166-168. Other books worth attention if available are Max Ascoli and A. Feiler, *Fascism for Whom?* (N. Y., 1938), and William Ebenstein, *Fascist Italy* (N. Y., 1939). G. Salvemini, *Under the Axe of Fascism* (N. Y., 1936), supports the antifascist view with a multitude of facts; the stories of Ignazio Silone present the same view in fiction. William G. Welk, *Fascist Economic Policy* (Cambridge, Mass., 1938), with bibliography, and C. E. McGuire, *Italy's International Economic Position* (N. Y., 1927), are useful particularly for their statistical material.

Lombard agriculture about 1800. (Greenfield, chap. 1.)

Agricultural development to 1848. (Greenfield, chap. 2.)

Trade of northern Italy. (Greenfield, chap. 3.)

Manufactures of Lombardy. (Greenfield, chap. 4.)

Industrial progress. (Greenfield, chap. 5.)

Contrast of north and south; poverty. (King and Okey, chaps. 5, 6.)

Manufacture and trade about 1900. (King and Okey, chap. 7.)

Rural classes. (King and Okey, chap. 8.)

Agricultural revival; cooperation. (King and Okey, chaps. 9, 10.)

Finance. (King and Okey, chap. 15.)

Camorra, Mafia and brigandage. (Merlino in *Political Science Quarterly*, 1894, 9:466-485.)

CHAPTER XXX

Spain to 1800

GEOGRAPHY AND PEOPLE

"Africa begins at the Pyrenees." The Iberian peninsula repeats in miniature the interior highlands and compact outline of the continent to its south. The traveler in Spain realizes the truth of the picture drawn by Washington Irving, of a stern melancholy country, with rugged mountains and naked sweeping plains. The average altitude, over 2,000 feet, ranks Spain among European countries only below Switzerland, and leads to extremes in temperature; the climate of Madrid has been described as three months winter and nine months hell. Parts of the country, particularly the northwest, have an abundant rainfall, but by far the larger part of Spain suffers from dryness which everywhere hampers agriculture and in some regions seems to forbid it. Shut off from the rest of Europe by the Pyrenees it is divided in itself by mountain ranges, which hinder intercommunication and foster sectionalism.

Destined by its position and structure to form a sort of eddy in the movement of peoples, and subject to a succession of foreign influences (Phoenician, Greek, Carthaginian, before the Roman), it has added to its original stock, Iberian and Celtic, elements from the north (Suevi, Vandals, Visigoths), and from the south (Arabs, Berbers). Modern Spanish, mainly Latin in derivation, has components from Arabic, from Teutonic, and from several other sources.

THE MOSLEM CONQUEST

A factor decisive in fixing the course of Spanish history was its conquest by Moslems, who crossed the straits of Gibraltar in 711, and in a few years had established their rule over nearly the whole peninsula. The invaders were more highly civilized than the Germanic rulers whom they supplanted, and in the "Dark

Age" of European history made Moorish Spain a leader not only in art and learning, but also in material development. They restored and extended irrigation works, they introduced new crops, and improved methods of cultivation. In a period in which towns had shrunk to nothing in northern Europe they built up cities. The statements that Cordova had 200,000 houses, that Seville had 6,000 silk looms in operation, and Almeria had nearly as many working on silk, wool and cotton, may be exaggerated, and still would show an industrial development which was not reached in the north for hundreds of years. Their skill in the manufacture of fine textiles, in chemistry, in working leather and metals, and in making paper, became proverbial.

THE CHRISTIAN RECONQUEST

The Moorish civilization was actually too far advanced to be appropriated by its Christian neighbors. On the other hand the rule of the peninsula by people of the Moslem faith imposed on the Christian states a pious duty of reconquest. Starting in the north, in the kingdoms of Navarre and Leon, spreading through Castille, so-named from the castles built for strongholds, the Christian power had extended by 1212 to embrace the whole peninsula except the small state of Granada in the far south.

The process of reconquest, spreading over nearly the whole peninsula and lasting for hundreds of years, dominated by its influence the whole succeeding history of Spain. This holy war twisted Spanish institutions toward militarism and clericalism; the warrior and the priest were exalted above the simple worker. Even the towns founded to hold the territory won back by battle were of the nature of garrisons, military rather than industrial in character; they were ill adapted to the rise of a strong middle class. The pride, contempt for labor, inclination to indolence, which are often, and quite improperly, ascribed to the Spanish people as a whole, became ingrained characteristics of a military class, and persisted later as this class dropped its arms and sought its living in government or the church.

CONDITION OF THE PEOPLE

In the Pyrenees as in the Alps the mass of the people maintained their personal freedom; mountain air, like town air,

"makes free." In the plains to the south, they were serfs or actual slaves, bought and sold. The reconquest, like that of the Germans against the Slavs, caused a demand for labor to settle the land taken from the Moors, and to garrison the towns. The land itself was for the most part granted in great blocks to warrior lords, to the military crusading orders of knights and to the church. The latifundia, which to the present day have been the sore spot of Spanish agriculture, can be traced back to this period. But to settle the land the lords had to grant "fueros," limited freedoms which improved the condition of the rural population both on the frontier and behind it. Dues were fixed, the cultivator could not be sold away from the land, he could count on the land remaining in the possession of the heirs of his marriage. The "bad customs" which had depressed the semiservile population were abolished. In a country like Spain, so varied in its topography and in the course of its local history, there was inevitably great variation in the condition of the cultivator. The great mass of the people became hereditary lessees, not owning the land they worked but secure in its possession so long as they remained upon it, and paying fixed dues to a lay or clerical landlord. Considerable amounts of land were held and administered by the village group in common, and have so remained to recent times.

Conditions were opposed to the development of a vigorous manufacturing industry, so long as the reconquest was in process. In the thirteenth century, when it had practically been completed, the towns entered a period of peaceful development, the handicrafts developed, and guilds grew up to regulate their activities. The great Gothic cathedrals are an evidence not only of the wealth of the church but also of the proficiency of craftsmen in design and execution. There is evidence of a fairly active trade within the peninsula, and in foreign trade Barcelona became one of the great ports of the Mediterranean.

POLITICAL AND ECONOMICAL RENAISSANCE ABOUT 1500

With the union of the crowns of Castille and Aragon, under Ferdinand and Isabella, in 1479, Spain entered abruptly on a new period. Most impressive is the political renaissance. A strong

central power imposed peace and order, and assumed active guidance of economic development. The Spanish crown incorporated the last remnant of the Moorish states, Granada, and for a time (1580-1640), Portugal; the king, now head of the Holy Roman Empire, ruled also over the larger part of Italy, over the Netherlands, over possessions in Africa and the Far East (Philippines) and over much of the Americas. At about the time of the defeat of the Armada by England (1588), the world seemed threatened by the ascendancy of a universal empire. It is no part of our work to follow the political history of the times, but it is necessary to have in mind this background to understand the fortune of the Spanish people.

For a time the political renaissance was accompanied by one in economic life. Manufactures, previously undeveloped except in such special centers as Barcelona and Valencia, spread to other places and grew rapidly in importance. Silk weaving took root in Toledo and Seville; the looms increased by thousands, some say by tens of thousands. The woolen industry grew to a position of national importance, occupying great numbers of people under leaders who counted their employees by the hundreds. We are cautioned not to exaggerate the importance of this industrial revival, and are reminded that the manufacture of woolens, at its height, did not equal that of the single town of Bruges in the Netherlands. Compared with previous conditions in Spain, at any rate, the industrial advance was extraordinary, and seemed to offer brilliant promise for the future.

Agriculture also, employing the vast majority of the people, showed for a time the benefit of a strong central government, imposing order and abolishing previous hindrances to the marketing of crops. The critical flaw in the agrarian organization, however, the concentration of landed property in the hands of a few great landlords, remained. These great estates, built up during the reconquest, were entailed; the possessor might not alienate them, but must pass them on intact to the eldest son. At first only the great nobles, leaders in war, had enjoyed the privilege of entail, but shortly after 1500 a law extended the privilege to all ranks, and removed still further the hope of the actual cultivator that he might sometime own the land on which he worked. Great dukes owned practically all of Andalusia, the Duke of

Medina-Celi and the Duke of Medina-Sidonia had estates still larger in the provinces of Granada and Toledo. These great landlords enjoyed yearly incomes of 100,000 ducats and more, for which they need make no return. The amount of land in the hands of the church was even larger, although the separate estates were not so great.

DECLINE ABOUT 1600; SHRINKAGE OF POPULATION

The economic advance of Spain in the period about 1500 had barely become apparent when complaints began that it was checked, and then that prosperity was receding. This decline, for such it was, affecting a great country and extending over a long period, is one of the significant chapters of economic history, and will be considered in some detail in this and the following sections.

The most impressive feature of decline was an actual shrinkage of population. Just when this began is a matter of dispute; some would put it as early as 1550, others believe that while it may have begun before 1600 the population at that date still was larger than it had been in 1500. As to conditions after 1600 there is no room for doubt. Exact figures are lacking, but estimates based on the best available sources agree in showing a shrinkage which must be described as nothing less than shocking. One scholar estimates a decline of the total population by one-quarter in the course of the seventeenth century; another would have us believe that even in the first half of the century there was a decline of one-third, a loss of 2 million souls. The towns, especially those in the interior and in the north, are said to have lost one-half or even three-quarters of their inhabitants. Even if we discount some of the estimates we have a phenomenon to which there are few parallels in history. There was no war in the peninsula, and though pestilence appeared on occasions, as it did in other countries of the time, it was nothing abnormal, and was not comparable in its ravages to the Black Death. Emigration to America or elsewhere was repressed rather than encouraged, and was never of proportions sufficient to play a great part in the shrinkage.

EXPULSION OF JEWS AND MORISCOS

Expulsion of certain elements of the population by the government did contribute to the decline. Long before, in 1492, the government, under the influence which activated the Spanish Inquisition, had proscribed the Jews, who had been coming to the peninsula since Roman times, and had an important place in the trade of the time. Some of them embraced Christianity, more of them emigrated or died. The total number involved, according to a sober estimate, was of the order of 200,000. In a complex society, however, all people may not be counted as equal units; the Jews were leaders and teachers in trade and finance, and left a gap which the native Christians were ill qualified to fill.

More serious, as regards the number involved, and with a direct effect on the decline of population after 1600, was the expulsion of the Moriscos. As the reconquest proceeded in the earlier period some of the Moslems fled before it to Granada and northern Africa; some remained under Christian rule, the so-called Moriscos. With the unification of the kingdom under Ferdinand and Isabella feeling increased against these people of alien race and religion. Some proposed a general massacre, that they be sent to sea and the ships scuttled, or that they be transported to America to work in the mines. The outcome was not quite so drastic; by an edict of 1609 they were all to be expelled. The only definite figure which we have of the number forced to leave the kingdom is of the order of 100,000 but is admitted to be incomplete; estimates of the total number expelled range up to 300,000, to 500,000, and even higher. Recent studies of price statistics, applied to the characteristic products of the Morisco population, do not show the revolutionary effect commonly ascribed to the expulsion, and the superiority of these people to the contemporary Christians in agriculture and manufacture has been called in question. Certainly, however, even if the figures do not bulk large in the total decline of population, the shock to the productive organization must have been considerable.

BEGGARY; CELIBACY

Spain lost workers in this period not only by expelling them from her borders; she lost them within the frontiers, when peo-

ple able to work did not work but became beggars, living on the proceeds of the labor of others. Vagrancy and beggary had assumed serious proportions even in the sixteenth century when economic conditions were improving and there was an active demand for labor. The militaristic contempt for manual work, a natural result of the reconquest, was especially characteristic of the upper class, but did affect some at least of the common people. Furthermore, people were encouraged to pauperism by the attitude of the church, which itself gave alms without discrimination, and taught the virtue of almsgiving without analyzing the effect on the recipient. Attempts to cure the evils of vagrancy and beggary by legislation were unavailing.

The church appears in another way as an influence to reduce the number of workers and to check the growth of population. With its rich endowment of land it offered an attractive refuge, whether in the ranks of the secular clergy or in one of the many orders of monks and nuns. The total number of priests, monks and nuns is said to have doubled in the seventeenth century when the population in general was declining; and to have amounted about the year 1700 to nearly 180,000 in a total population under 6 million. Ecclesiastical celibacy was obviously an obstacle to a growth in numbers. It is dangerous, however, to ascribe to it an influence of prime importance. Reasons will be given later for considering it as much an effect of other conditions as an active cause. Even outside the church so many people refused to assume the responsibility of a family that celibacy is said to have been much more common than marriage.

DECLINE OF MANUFACTURE

The population of Spain declined in this period not so much because people were driven out as because those who remained could not make a living. They could not support themselves, and in addition children in sufficient number to fill the gaps when the parents died. Towns shrank in size as industries declined on which they had grown up. The silk looms of Seville, said to have numbered 3,000 in the sixteenth century, had dropped to 60 in 1655. The woolen manufacture, formerly so prosperous, was reduced to a few unimportant factories producing coarse stuffs. Spain became dependent on foreign countries for manufactures,

even for the arms and munitions of her armies and for the ware exported to her colonies.

An interesting question relates to the part played in these changes by the flood of silver from the New World, which produced its first effects in Spain before it was distributed, in spite of all prohibitions, among the other countries of Europe. In rough measure prices tripled in the course of the sixteenth century, hampering exports, particularly as wages did not lag so far behind prices as in other countries, and so imposed a heavier burden on the employer. It was cheaper to buy foreign goods with the silver produced by Indian slaves than to pay the prices demanded by home industry. American silver unquestionably was a disturbing factor in the economic situation, and further exercised a demoralizing psychic influence, giving an illusion of prosperity and power which was unreal. Still, it is not safe to go so far as does one economic historian, who ascribed the decline of Spain to "the fatal boon of that wealth, which was not earned by industry, but gathered by spoliation and violence." Manufacture was still relatively unimportant, and could have recovered if other parts of the national economy had been vigorous and healthy. Agriculture remained the mainstay of the people. Before studying conditions in the rural districts it will be profitable to survey those factors which affected all branches of the national economy, and which, so far as we can go in the search for prime causes, offer the best explanation of Spain's decline.

RESPONSIBILITY OF THE GOVERNMENT FOR THE DECLINE

Macaulay wrote that everyone ought to study the history of Spain if he wanted acquaintance with the morbid anatomy of government. "All the causes of the decay of Spain resolve themselves into one cause—bad government."

In a single century the Spanish monarchy had risen to a position of commanding importance, not only in Europe but in the whole world; it had no peer in the extent of territory and in apparent power. It gained its position and endeavored to maintain it by wars which were almost constant. It fought France, the Turks, the Protestant states of northern Europe. As the German emperor of the Middle Ages had wrecked his royal power

by aiming at universal dominion, so now the Spanish monarchy, in the same quest, while it kept its power ruined its people. It wasted their resources and destroyed their livelihood not only by the crushing burden of taxes imposed upon them, but also, and perhaps even more, by the short-sighted and mistaken nature of its fiscal policy.

BURDEN OF TAXATION

The backbone of the tax system was the *alcavala*, a Moorish name for a sales tax which had been taken over from early times. In theory it was a 10% levy on every exchange, paid by the vendor, applying to property both real and personal, and exacted every time a good changed hands. Actually the administration of such a tax was so difficult, and the extortion of tax farmers who contracted to collect it was so oppressive that the tax was generally commuted for fixed sums, raised as the locality might determine. In the few years 1561–75 the tax was quadrupled, in the single year 1575 it was tripled; many places which had commuted for lump sums preferred to return to the original method of collection, bad as it was.

When King Philip went to mass in Toledo in 1579 he was surrounded by a crowd of people who urged him to free them from a tax which was ruining them; the city ruler assured him that they were right, and that in less than a year the population had diminished by more than 8,000 souls. The Cortes (political representative body) confirmed the statement that taxes were wrecking industry; men were deserting their families, women were forced into prostitution, beggars were increasing as never before. The *alcavala* was only one of many taxes, reaching out to gather revenue from every imaginable source, regardless of the reaction on production. The Cortes of 1594 asserted that a man with a capital of 1,000 ducats had to pay yearly 300 in taxes; that a farmer, however small his rent, could not meet the demands made on him, and deserted his holding even to live in prison. Cultivators who had planted sugar cane or mulberry trees rooted them up to avoid the crushing taxes. A Spanish writer of a later period instanced the case of a man making a textile called *manto*; in a year he would have to pay in taxes not only all his earnings but also 64 reals in addition, "hence it results

that he would have gained more by making nothing, and in Spain it is profitable not to work." In Catalonia looms for weaving cloth could not be worked except near an office which supervised manufacture, sealed the cloth and levied a tax; the tax brought in 50,000 piasters a year, and caused a loss of over 500,000.

THE MESTA

The history of the Mesta is a good example of the harm wrought by ill-considered measures of a government which was blind to the general welfare. A mesta was a group of sheep owners in a loose organization to engage shepherds and arrange for branding and the return of strays. The native sheep bore wool of relatively poor quality, but the merino, probably introduced from northern Africa, offered a short crinkly staple much desired for fine stuffs. The marked differences in Spain in climate and topography made a seasonal change in pasturage, such as has been practiced in other Mediterranean countries, a distinct advantage. Sheep fed in summer on the high lands of Leon and Castille were driven south in September, especially to the province of Estremadura in the southwest, to be wintered there and driven north again in April. The passage required about a month, during which the sheep had to find pasturage on the way. Medieval regulations forbade their trespass on enclosed pastures or mowing meadows, on grain fields, vineyards or orchards. The great Mesta was a protective organization, somewhat like a gild, to represent the interests of the owners of sheep engaged in these migrations. The Spanish kings of the sixteenth century, stimulated by mercantilist reasoning to favor exports and finding in merino wool a valued product, bestowed far-reaching privileges on the Mesta, at the expense of regular agriculture. Laws reserved for the sheep owners pathways, about 250 feet wide, empowered them in addition to lease land for the lowest rental ever paid for it, and to graze their flocks for nothing on land on which they had ever fed. Time and again laws were passed demanding the reversion of land from tillage to pasture; and restrictions on the right to graze on cultivated land were loose and ill-observed. At their height the flocks of the Mesta counted 3 million head or more, and parts of Spain, notably in Estra-

madure, appear never to have recovered from overgrazing by the sheep.

The Mesta was not the most important factor in the decline of Spanish agriculture before and after 1600. The Mesta persisted in form to the nineteenth century, but even before 1600 had given place in large part to settled sheep graziers. These also enjoyed governmental favors to the disadvantage of arable agriculture. In the country, however, as in the towns, crushing taxes, badly devised, were the great drag on production and population; and their bad effects were intensified by the distribution of landed property so largely in the hands of unproductive classes, and by ill-judged laws restricting the transportation and marketing of crops.

DEFORESTATION

The Mesta does appear to have contributed to the deforestation of Spain. In contrast to the desolate treeless plains which so impress a traveler today in Castille and other provinces, the country is said to have had abundant forests in the Middle Ages, offering plenty of wood for building and heating. Migrant herdsmen had the right to cut wood, and, more important, both migrant and settled sheep graziers burnt the land over, to get better pasture. Attempts after 1500 to check and reverse the process of deforestation were ineffective. The people, under the conditions in which they lived, can scarcely be blamed for opposing these attempts and for cutting wood when they wanted it, without regard to the future. The administration was both too weak and too corrupt to intervene.

A good illustration of the way in which the government passed bad laws which were themselves perverted to worse ends is given by a Spanish author who described conditions as they were in northwestern Spain in the eighteenth century. In that region a tree might not be cut, even by the owner of the land on which it grew, without express permission of the local representative of the navy department. A peasant, needing wood to repair his hovel, his plow or his cart, must travel many miles to the naval office, must wait for his petition to be considered, and then for an agent to be sent at his expense to view the tree, and then to get word that the petition was granted. Many were fined and

imprisoned for infraction of these regulations. Yet at this very time an official of the navy department would preempt wood ostensibly for ship building, and would sell it in the town market, so that the peasant on whose land the tree grew would have to buy it back at an advanced price.

DECLINE OF THE MONARCHY; A PARASITIC UPPER CLASS

With reference to its political history, really the decisive factor in its economic fortunes, the course of affairs in Spain may roughly be blocked out as follows: rise of the world empire in the sixteenth century, rapid decline in the seventeenth, attempt at recovery in the eighteenth under Bourbon kings established by French influence, and combining French despotism with religious absolutism, finally the gradual rise of a new Spain, self-contained, after 1800.

After the strong kings of the sixteenth century there was a succession of weak monarchs who left control to their confessors or their favorites. As early as 1559 the Cortes had advised the king to declare his bankruptcy, to free the land from the burden of his debts; and bankruptcy came in 1575, attended by a violent crisis in trade. In the next century a budget, unbalanced in spite of further increases in the tax rates, led to currency inflations, accompanied by a further decline in the royal credit. The interest rate on a loan contracted in 1639 is said to have been 70%; Charles II had to borrow from a courtier to pay his table expenses, as merchants refused him credit; hostlers deserted the royal stables in 1683 because they had not been paid for three years. From 1680 to 1700 Madrid was in anarchy; the police, unpaid, disbanded to become robbers; there were real battles for bread.

An upper class enjoyed privileges for which it made no return. "As to Spain," wrote Burke in his *Reflections on the French Revolution*, "it is a nerveless country. It does not possess the use, it only suffers the abuse, of a nobility." Shortly before 1800 there were 119 grandees of Spain, called cousins of the monarch and distinguished by their right to keep their heads covered in his presence, and 535 of the high nobility, bearing titles and called royal relatives. These nobles were proprietors of a large part of

the land of Spain, but rarely saw the land which they owned. Below them were some 480,000 *Hidalgos*, almost one-fifteenth of the population, who had also certain military and fiscal privileges, and who, even if they were as poor as church mice, were at least too proud to work. There was no vigorous middle class. Tax farmers and successful merchants bought titles and took offices which might pay small salaries but which offered opportunity to amass large fortunes.

STIFLING OF MANUFACTURE

Spain, with great colonies of its own, became itself a mere colony for more progressive European states, paying for their manufactures by the export of wool, wine and olive oil. Unable to make a living, people left the country districts and the interior towns, first for the seaboard, where colonial and foreign trade still offered some openings, and then for some foreign land. Manufacture, burdened by taxes and by vexatious government restrictions, was harassed also by incessant quarrels of the gilds. The establishment of royal factories with special privileges contributed to paralyze private industry, opened the door to grave abuses and failed to start undertakings with vitality sufficient to make their way without help. Royal proclamations, such as that of 1682, declaring that nobility and its prerogatives were not impaired by the maintenance of textile factories, or that of 1783, declaring the trade even of the tanner to be honorable, were mere idle words. Only after 1800 was the country finally freed (by the Cortes of Cadiz, 1811 and 1813) from the burden of the old restrictive regulations, and from the industrial privileges of certain persons and corporations.

DISTRIBUTION OF LAND OWNERSHIP

In agriculture the characteristic and decisive fact was still the concentration of landed property in the hands of relatively few owners of great estates. The Cortes of Cadiz, 1812, estimated that half of the area in use was owned by the nobility, one-sixth by the clergy, one-third by the people. Other estimates varied, and there were immense differences in different regions. In the province of Avila in the eighteenth century the church was said

to own nearly 60%, the nobility nearly 40%, leaving for private owners just about 2%.

Some small owners, peasants in the true sense, still persisted, notably in the Basque region of the north. The times were bad for the little man. Taxes, usury and corrupt politics robbed him of his own holding and of his share in the common land of the village, and turned little farms into great sheep pastures. The country people were personally free, but most of those who were not mere laborers carried still the burden of commuted medieval dues, which they were bound to pay to a superior. In Castille it was assumed that they must pay in dues all of their wheat crop, keeping for themselves the vegetables, hens and eggs and milk. Conditions varied according to the region, but in general the picture which is given us of the life of the common people is one of almost tragic misery.

In contrast the high nobles lived a life of extravagant luxury. Each sought to outdo the other in his display of wealth, particularly in the number of his personal attendants. Their retinues counted not merely hundreds but thousands. Competing in extravagance, many of them were heavily burdened with debt, but still were protected from losing their peculiar eminence by the fact that their estates were strictly entailed and could not be alienated. Attempts in the latter part of the eighteenth century to remedy this unwholesome condition, by which so large a part of the area of productive land was in the hands of an unproductive class, had relatively little effect.

THE CHURCH

At the close of this period (1787) the Spanish church counted 191,000 persons in its service, about 2% of the total population; just about half were monks and nuns in over 3,000 separate institutions. The church offered not only a refuge, it offered a career which else was closed to a man of humble birth. A priest could rise to be bishop or cardinal, and from that vantage point could become ambassador, provincial president or minister of state.

Richly endowed already in the period of reconquest, the church received constant additions by gifts of the pious, and kept what it got by the principle of mortmain. The estimate cited above, that one-sixth of the land in use was held by the church,

appears to have been well within the facts. An investigation of 1766 showed that the largest part of the land in Castille was in mortmain, and an authority on the economic history of Spain (Colmeiro) thought that ecclesiastical mortmain absorbed the larger and better part of all real property. The church was not entirely exempt from taxes, but paid nothing near to the proportion of its wealth. Exemptions of clergy and nobility intensified the burden of taxes on the common people, and explain the bitterness of the common complaints that churches and monasteries, under cloak of their immunity, engaged in trade.

The church in general got the revenue from its lands on the terms of an hereditary lease, which gave the cultivator security of tenure and left him a livelihood. When it administered the land itself the charge was made that it undermined the independence of the small proprietors of the region, bought them out, and reduced them to the position of day laborers.

LOW YIELD OF AGRICULTURE

The climate and topography of Spain made agriculture difficult at best. Add to these obstacles bad government, taking much and offering little, and a distribution of property rights which diminished or destroyed the incentive of the worker—there is then no reason for surprise that productivity and the standard of life depending on it were low. In the small area of irrigated land, perhaps 0.5% of the total, spade cultivation brought abundant crops 3 or 4 times a year. The Cortes of Cadiz, 1812, estimated the total area of Spain at 123 million acres, and the area under cultivation at 65 million, somewhat over half. A modern writer believes this latter figure was excessive, and would reduce it for the period about 1750 to 48 million. But as will appear later in a description of agricultural methods of the nineteenth and even of the twentieth centuries only a small part of the cultivated area was planted with grain at one time; immense areas were left to grow up to weeds and brush. The area actually bearing grain about 1750 is estimated to have been only 12 million acres, less than one-tenth of the total. And on this restricted area cultivation was so primitive that the yield often did not exceed twice the broadcast seed. Joseph Townsend, an Englishman who traveled in Spain in 1786–87, gave pictures of the

agricultural implements in use, the *laya* or spading fork in the north, the plow in the center and south. Many of the plows were mere wooden hooks, barely scratching the ground, resembling those pictured in Egyptian monuments and still in use in the Far East. There was little attempt to maintain fertility by use of manure, of which the supply was scanty at best; and it was perhaps fortunate for later generations that the shallow plowing did not exhaust the soil. The cultivators were indomitably set in their ways, and would have resisted improvements even if the great landlords had taken the trouble to teach it. Many cultivators used the Arabian hoe instead of a plow, and in general followed the methods established in the period of Moorish occupation. The grain, instead of being threshed, was then (and even after 1900) spread out fanwise on a clay floor, and cut to bits by a sledge shod with hundreds of flints, drawn over it by oxen. Roads were so bad, and tolls so troublesome until their abolition in 1765, that there was little incentive to raise food for a distant market.

QUESTIONS

- Characterize the country and people of the Iberian peninsula.
- What was the date of the Moslem conquest? What were conditions in northern Europe at the time?
- What were the economic conditions under Moslem rule?
- What were the effects of the Christian reconquest?
- Sketch economic and social conditions following the reconquest.
- Describe the development, political and economic, about 1500.
- Indicate the extent of decline of population in the following period.
- Estimate the influence of expulsions; of the church; of silver; of government policy.
- Illustrate the burden of taxes.
- What was the Mesta; in what way was it abusive?
- Explain deforestation of Spain. Illustrate perversion of political power.
- Sketch the course of the Spanish monarchy, 1500-1800.
- What was the distribution of social classes?
- Explain the decline of manufacture.
- Sketch the distribution of property in land, and condition of the country people.
- Describe the position of the church about 1800.
- Illustrate and explain the low yield of agriculture.

READING

General histories of Spain (by Chapman, based on Altamira [N. Y., 1931]; by Bertrand and Petrie [N. Y., 1934]) give little attention to economic affairs. R. B. Merriman, *Rise of the Spanish Empire* (N. Y., 1918 ff.), also is mainly a political history. References to monographs will be found at the end of the present volume, and some references are given below to shorter studies by former students of E. F. Gay, *Facts and Factors in Economic History* (Cambridge, Mass., 1932).

Land and peoples. (Merriman, vol. 1, pp. 3-50; see also Madariaga, reference in next chapter, chaps. 1, 2, pp. 15-38.)

Commerce and industry in early Spain. (Ardzrooni in *Journal of Political Economy*, 1913, 21:432-453.)

The reconquest of the peninsula. (Merriman, vol. 1, pp. 53-93.)

The medieval Castilians. (Merriman, vol. 1, pp. 167-204.)

Institutions of medieval Castile. (Merriman, vol. 1, pp. 205-270.)

Institutions of Aragon and Catalonia. (Merriman, vol. 1, pp. 451-498.)

Medieval Spanish guilds. (Klein, in Gay, pp. 164-188.)

The Mesta. (Review of Klein by Hannay, in *Edinburgh Review*, Oct., 1922, 236:316-332.)

The economic condition of Spain in the sixteenth century. (Moses in *Journal of Political Economy*, 1892-3, 1:513-534.)

The decline of Spain. (Hamilton in *Economic History Review*, 1938, 8:168-179.)

Ships and shipping. (Usher in Gay, pp. 189-213.)

Mercantilism before 1700. (Hamilton in Gay, pp. 214-239.)

Spanish trade with the Indies. (Review of Haring by Hannay in *Edinburgh Review*, Oct., 1918, 228:247-264.)

CHAPTER XXXI

Spain since 1800

GROWTH OF POPULATION

The population of Spain, about 10 million in 1800, had increased by 1900 to about 18 million. The country still was sparsely settled. With an area a little less than that of France or of Germany it counted only about a half or a third of the people of those countries. Back from the coast, where there was a fringe of fairly thick population, the density diminished so that in large areas it was less than in central Russia. Despite this thin population emigrants, counted by the hundred thousands, were leaving the country every year about 1900. If the country gave evidence of the capacity to support more people it still could not keep them in comfort. The death rate, over 32 per thousand in 1901, was an ominous symptom of a backward organization. The mass of the people still got their living by agriculture, and a survey of economic history and conditions must begin with that occupation.

IMPERFECT REFORM OF THE DISTRIBUTION OF PROPERTY IN LAND

The Bourbon monarchy, restored by the English after the failure of Napoleon's invasion of the peninsula, was a mere continuation of the old régime. The actual rule was exercised by favorites, confessors, or by a new type destined to grow in importance, the military politician.

Even the Bourbon monarchy could not remain entirely untouched by the spirit of the times. It did little to reform the great evil of Spanish agriculture, the unequal distribution of landed property, but it did remove some of the hindrances to improvement. Laws passed in the early part of the century freed land from entail, and forbade the church or charitable corporations

to acquire more landed property. Somewhat later the government declared the estates of the clergy and of the monastic orders to be national property, to be sold for the benefit of the treasury, then as always in need of funds. The sales did put some land in the hands of the cultivator, but more into the hands of absentee landlords. The "little man" had no means with which to buy, and could borrow only at fabulous rates of interest, running up to 30 or 40% or more. Men of substance, and particularly those who enjoyed political influence, bought millions of acres on favorable terms. The ordinary villages actually lost in the process, for large amounts of common land were sold, and passed, often fraudulently, into the hands of local magnates. Over 700 villages complained of abuses of that kind.

Removal of feudal exemptions from taxation left the poor still more heavily burdened than the rich, who used their political influence to obtain low assessments and to escape with light taxes.

STATISTICS OF LAND TENURE AFTER 1900

Comprehensive statistics of land tenure in Spain are still lacking at the time of writing. The government, about 1900, began a survey which, at the end of 1930, was complete or nearly so in parts of the south, included a considerable part of central Spain, but had been barely begun in the northern provinces. Altogether in 1930 the survey covered about half of the total area.

In the ground covered the survey disclosed a total of 1,790,026 proprietors of rural land, of whom 17,349, less than 1%, enjoyed 42% of the total landed income. Taking into account the low yield of the large estates, which will be described later, and their notorious underassessment, it is safe to say that one of the great proprietors held as much land as 99 of the small.

The statistics do not permit a precise determination of that fact since they list pieces of land measured in acres, without regard to ownership, each separate piece counted as one, even though several might belong to one man and indeed might form part of one agricultural undertaking. There is thus a duplication of proprietors. With that caution as introduction, the figures of the accompanying table present, as well as they can, conditions in southwestern Spain, in provinces forming about a quarter of the total area.

LAND HOLDINGS, SOUTHWESTERN SPAIN, 1930

Size, in Acres	Number	Percentage	Extent, in Million Acres	Percentage	Mean Size, in Acres
0 to 25	1,460,760	60	2	7	1.3
25 to 12	785,810	32	4	15	5
12 to 124	160,765	7	5	18	30
124 to 618	19,425	0.7	5	18	250
Over 618	7,508	0.3	11	42	1,530
Total	2,434,268				

Imperfect as they are, these figures disclose the outstanding fact characterizing conditions, concentration of land ownership in great estates held by relatively few persons. This held true, in varying degree, through the center and south of the country. In a country mainly devoted to agriculture the mass of the people lacked land on which to live. From the social viewpoint the picture is that of an inverted pyramid, unstably balanced on its point.*

BACKWARD AGRICULTURE OF THE GREAT ESTATES

The statistics cited covered in general parts of Spain in which a scanty rainfall and sometimes considerable altitude presented the cultivator with real difficulties. The product could never equal that of more favored regions. Yet without question man conspired with nature to keep the product low. Latifundia covered a large part of the surface, and depressed the agriculture. The great estates had an inordinate proportion of their area in fallow, growing no crops, and in brush land, used only for pasturage. The common system was that which had been followed for hundreds of years, and which was actually behind the medieval system of northern Europe. A third of the land was

* On irrigated land small holdings would be justified, but the area irrigated was only 1 3% in the Southwest.

Statistics of the cadastral survey are unsatisfactory, both in principle and execution. Totals for the southwest, *Anuario Estadístico*, 1934, p. 212, do not check nor again do these with p. 213. I have refrained altogether from citing figures for net yield, *liquido imponible*, used by Madariaga and others as a measure of landed income, because (1) the definition of net yield was highly technical, and altered in the course of the survey, (2) the assessment, according to Carrón, varied from a half to a third of the actual, (3) the gold value of the peseta was subject to wide fluctuations.

sowed with cereals, a third was left to grow up in weeds and brush on which horses and bulls for the bull-ring could be pastured, a third was plowed for the next year's crop. No manure was applied. In Estremadura a full half of the land was usually in pasture, and on the great estates in Andalusia land at a distance from the farm buildings was planted to crops only once in four to five, even eight to ten years. In Caceres, one of the eight provinces of the statistics, a five-year system was common, with three parts in pasture, one in fallow, and only one planted. Agricultural authorities were in agreement that a better use of the available water, whether rainfall or underground, would have greatly increased the yield, and travelers noted that small holdings were productive while great estates near them were barren.

CONDITIONS OF LABOR ON THE LATIFUNDIA

The proprietors of the great estates lived in Seville or Madrid, turning the management over to an entrepreneur, who hired laborers mostly working by the day. The condition of these laborers, the bulk of the rural population, was below that of any others even in Spain. Villages were widely scattered; some laborers walked for hours to their work, some slept near it, on the open ground or in rude barracks. About 1900, allowing the peso the high rate of \$0.20, they got \$0.15 a day plus coarse food, or \$0.30 to \$0.40 without board. At Jerez (giving its name to sherry), some men worked 15 or 16 hours, from 3 30 A.M. to 8.30 P.M., for \$0.20 or less. The worst feature of the situation was that for many days (115 to 165 in the year, one author says) they were unemployed. Even with earnings of other members of the family added, and even on their low standard of life, there was often a deficit in the family budget. Men who could not find work in the mines to fill out the year were forced to beg to avert starvation.

Under these conditions agrarian uprisings, Jacqueries like those of the Middle Ages, were inevitable and recurrent. "Traveling in Andalusia in 1869," wrote a Belgian author, "I lighted upon peasants harvesting the crops on the lands of Spanish grandees which they had shared among themselves. 'Why,' said they, 'should these large estates remain almost uncultivated in the

hands of people who have neither created nor improved them but are ruining them by spending elsewhere the net produce they yield?' " American newspapers in August, 1905, described starvation and famine riots throughout this part of Spain. Thousands of laborers were reduced to eating the roots of wild plants, other thousands roamed the countryside laying hands on food where they could find it. The jails were crowded with persons who had committed no offense, but who had surrendered to the police on the pretence of having committed crimes in order to get shelter and food.

LAND TENURE IN NORTHERN SPAIN

The latifundia of the south persisted down to the revolution of 1931, and presented one of the great evils which the revolutionary government sought to remedy. We must attend now to agriculture in the north of Spain. As a result of the historical development we find here conditions in strange contrast with those of the south. In place of latifundia we find minimifundia, to use a word expressing land holdings too small for efficient cultivation, and themselves broken into smaller fragments.

Several factors may be cited to explain the contrast. The north lay in the rear of the reconquest which had been accompanied by the huge land grants. Physically it was a land of more varied topography, enjoying much larger rainfall, and hence better suited to small holdings. As the quasi-feudal structure decayed the landlords made the land over to the actual cultivators, on long leases running for several lives, which by a law of 1763 were made practically permanent. The seigniorial dues were crystallized, and remained as a fixed burden on the land, a sort of ground rent on which the superior landlord could live as an absentee. Under him subleases became common, extending to the third and fourth degree as a growing population demanded individual shares; and families extended the process of morselization so that each member might have a part of each kind of land. There are still no statistics, like those of the south, to summarize the results of this process, but a report of 1907 gave illustrations of its extent which seem almost fantastic. A farm consisted frequently of 40 or 50 fragments; in one place each holder had 80 to 120, spread in a radius of 3 miles, and amounting in the ag-

gregate to less than 20 acres. In one district (Vigo) a plot of 2 acres was considered very large, and some fragments were little over 10 feet square. A classic example of the combination of this splintering with the persistence of traditional dues was a plot of land less than 20 feet square, over which 3 men had rights; one owned the land, another owned a chestnut tree growing on it, and a third had a right to 6 eggs paid in alternate years by the first and second.

On such small bits of land a plow was useless. The usual implement was a spading fork, dating back to Roman times; an experienced man worked two at once, turning the soil by a backward strain which involved immense labor. Where a plow was in use a British consul reported (1871) that a good man plowed $1/5$ acre in a day.

MINERAL INDUSTRY

The surface of Spain has been called the ceiling of one vast mine. No country in Europe compares with it in variety and richness of mineral resources. It lacks an abundant supply of good coal, which it has imported in large part from abroad, but has been famous for its iron (Oviedo and Bilbao), copper (Rio Tinto), and quicksilver (Almaden), as well as for other metals and minerals. Yet even in 1920 only 1.6% of the gainfully employed were occupied in mining. Lack of capital, absorbed and squandered by the government, and lack of technical knowledge and equipment, were natural obstacles to the growth of a native mineral industry. Of even greater importance, probably, was a set of mining laws designed apparently to encourage the speculator and discourage the serious enterpriser. Any man with political influence could get a concession, without regard to the owner of the surface soil, and could take the position of the dog in the manger, who did not eat but kept the ox from eating. Such mining as was developed was the result of foreign, mainly English and German, enterprise. Laws of 1900 and later years were designed to remedy the unwholesome situation.

MANUFACTURE

Manufacture, in which 19% of the gainfully occupied were employed in 1920, had had to make its way against serious ob-

stacles. Here again, as in mining, capital and technical experience were lacking. The loss of the colonies in 1898 deprived the Spanish manufacturer of a field which had been previously reserved to him. The poverty of the agricultural population, embracing the great mass of the people, gave him a poor market at home. High protective duties did build up some modern large-scale industries (sugar, steel); on occasion Spanish rails were actually exported to California; but in general exports could be made only at the expense of the home consumer, by dumping below cost. The old woolen industry was struggling against the competition of other countries; the cotton industry had been particularly hard hit by the loss of the colonial market; the chemical industry was undeveloped. Manufacture in general was dispersed among many small units, lacking the efficiency of the stock company.

CONDITION OF URBAN LABOR

Reports of American consuls, published in 1885, gave a concrete picture of conditions of labor at that time. They pictured the working class as "steady, laborious and honest, but not saving" (Alicante), their life as that of "light-hearted cheerful poverty" (Cadiz). At Alicante for a working week of 72 hours stevedores, highest paid of the laboring class, received \$7.50, hod carriers got only \$2.25 on the average. Teachers in the public schools got \$4 to \$10 a week. Salespeople in the shops, working 84 hours a week, got \$1.50 to \$6, with board and lodging. In Barcelona boys in dry goods stores got \$2.50 to \$10 a month, "according to size." Household maids received a monthly wage of \$1.50 to \$3, and even more in large cities.

The reader must not assume that these low wages were offset by a low cost of living. Food actually cost more than in the United States of that time. As a result of bad agriculture Spain could not even raise its own food, and had to pay freight on wheat imported from America; as a result of bad politics a customs duty, roughly \$0.30 a bushel, was added to the price. Similar customs duties were imposed on such staples of popular consumption as codfish and kerosene; and these duties were raised again, 70 to 100% it is said, by consumption taxes (octrois) levied in the towns. Even with a very frugal diet, and with low

expenditures on clothing and housing, it was hard to make both ends meet. Of a man and wife at Cadiz, earning between them \$336 a year, it was said that they could get along well enough if they had no children, that with one child they could not save anything, that with two children they felt a pinch, and with more children this became real pain.

The Spanish government, as will appear later, was not of the sort to concern itself seriously with the welfare of the working class. After 1900, it is true, a series of laws was passed, embodying the principles of modern social legislation, but in these matters everything depends on honest and efficient administration, and most of these laws remained dead letters. Nor was the worker allowed to help himself. Trade unions remained outside the law, and strikes were broken by methods in which law played no part. Strikers were simply seized, handcuffed, and deported to regions sometimes hundreds of miles distant.

POLITICAL CONDITIONS

To the history of Spanish government we must return; without an understanding of it the economic history is not intelligible. It is fortunately unnecessary to review in detail the dreary course of the Bourbon monarchy. A stupid absolutism, interrupted at times by revolution and reaction, by a dynastic quarrel (Carlism), by a short-lived republic (1873-74)—through the course of these changes the abiding fact was a government exercised in behalf of a favored few and blind to the interests of the mass of the people. In the last quarter of the century, however, there was a change of some significance. Constitutions to limit the power of rulers had been adopted before then, but now the attempt was made to give the constitution the appearance of reality, and to adopt at least the forms of parliamentary government as practiced in other countries. Canovas del Castillo, chief of the so-called Conservative group, deliberately founded a parliamentary opposition, called Liberal, and put Sagasta at its head. One party was as liberal or as conservative as the other. They were agreed on the one important principle of sharing power under the dynasty and keeping other groups out. The really important distinction was between the Ins (*empleados*) and the Outs (*cesantes*). When one party had been in power for a considerable

time the opposition grew restless, and pressed its demands with sufficient firmness to force a change of ministry. There was a clean sweep of offices. The Outs came in and drew salaries; the Ins went out and drew pensions.

Parliamentary elections were fixed by party managers who determined the number of seats to be given to the opposition and even to outside groups such as the republicans. Most of the people did not take the trouble to vote. Some votes recorded were obtained by small bribes or by threats. It was simpler to determine in Madrid the result to be recorded in any constituency, and if the recording officer did not report the proper numbers to make the necessary changes in them. A district overwhelmingly republican might be represented in the Cortes by a reactionary legitimist. A parliament constituted in this fashion was of course entirely subservient to the ruling politicians.

A saying has been credited to the American artist, Whistler, that the only virtue of the Spanish people was their industry, and their only industry was vice. This is outrageously unfair. On the other hand, the evils of Spanish government, in the period before 1900, can hardly be exaggerated. The constitutionalism of the period has been properly termed "a criminal fraud"; a foreign diplomat said of it, "it never produced, I do not say a genius or a statesman, but not even a *man* of the vertebrate order."

LOCAL BOSSES; THE CIVIL SERVICE

The political machine, which centered in Madrid, was represented throughout the country by local bosses, *caciques*, given the name borrowed from that of Indian chiefs in South America. Ibanez, in his novel "The Torrent" (1921), described the system; and his fiction was based on sober fact. The *cacique* might be a public official, a rich landowner or employer; whoever he was he exercised the real power of government in his locality, and used it ruthlessly to advance the interests of himself and of his political allies. Below the *caciques* were their subordinates, the *tiranos chicos*, petty tyrants, who enjoyed tax reductions or exemptions for themselves and their supporters, stole land and labor, and used their political influence to break down any opposition.

The civil service was confessedly corrupt, and even the administration of justice was not immune to pecuniary and political

influence. As late as 1922 the Solicitor General complained of the interference of politicians in important law cases; a trial for a theft which gave rise to a triple murder had dragged along for five years.

MILITARY AND SOCIAL POLICY

The government lavished money on the army, but paid most of it to the officers, who had assumed a position of grave political importance. In 1906 it maintained 221 generals on the active list, and a still larger number in the reserve; the Minister of War said that 500 generals were too many for 80,000 effective troops, but was told that there were not too many officers, there were not enough men. There were so many colonels that some regiments counted only 400 or less.

On the other hand the government starved the services of social welfare. It spent on education a mere fraction (even in 1922 not much over a quarter) of what it spent on the army and navy. A law of 1857 had made primary education compulsory, but, like most Spanish laws, remained a dead letter. Three-quarters of the population were then illiterate; in 1900 the proportion had been reduced to about half. In a previous section mention was made of the pay of a school teacher in 1885. Returning to the facts supplied by American consuls of that date, we find the salaries paid to teachers in the public schools ranging from \$50 to \$300 and in some cases up to \$580 a year, from \$4 to \$6 or \$8 a week in important towns. Funds were lacking, even on a pitifully low wage scale, to provide schooling for all. A Spanish authority estimated in 1923 that half of the Spanish youth was not being educated at all, that a quarter was being educated by the state and another quarter by the church.

CONDITIONS ABOUT 1900

The war of 1898 with the United States was a turning point in Spanish history. At the time it seemed a calamity. All important colonies had been lost. Successive deficits had loaded the treasury with debts at usurious rates of interest. Vicious political influences honeycombed the tax system. The little man was burdened beyond endurance,* while wealthy landowners evaded

* A newspaper item from Valencia, Dec. 11, 1912, reported that villagers in the vicinity had attempted to burn alive a group of tax collectors.

payment in whole or in part. Receipts from customs duties were seriously diminished by organized smuggling. Scores of municipalities were insolvent. The provincial asylum at Malaga could not keep servants because it owed them back pay for over two years; the hospital at Murcia could not give the patients meat because the butchers would no longer trust it. In most of the provinces teachers in the elementary schools had received no pay for a year and escaped starvation only by entering the ranks of the professional beggars. Many of the lower middle class in the large towns were reduced to one meal a day, of bread, pease, olives and garlic.

IMPROVEMENT AFTER 1900; ALFONSO XIII; FIRST WORLD WAR

Critical as conditions seemed they were actually the beginning of better times. Relieved of burdens abroad the Spanish people directed their whole attention to improvement of conditions at home. They showed a new vigor both in politics and in economics.

In politics they had to meet the challenge presented by the accession of a new monarch who cherished the ideals of an outworn absolutism. Alfonso XIII had assumed power in 1902, on attaining the age of sixteen. He gave evidence early of his Bourbon heritage, exercising an irresponsible rule by personal influence over officers and politicians, backed by royal favors. The government returned to the repressive features of the old régime: muzzling of the press, employment of spies and *agents provocateurs*, suspension of the jury system and other constitutional guarantees, with suggestions of the tortures of the inquisition. The old "parties," conservative and liberal, broke up to make place for coalitions engineered by the king.

The election of 1907 was like former ones in that it brought only 30% of the electors to the polls, but unlike them in that it returned from Catalonia out of 59 deputies 54 known to the people and really wanted by them. That this was but the beginning of an emancipation of the electorate which the government no longer dared to resist was proved in the election of 1919 when the government, in spite of all efforts, failed to win a majority. Popular opposition had become a real threat.

Manufacture recovered from the blow suffered in the loss of protected markets in the former colonies, and there was a marked increase in the product of agriculture and particularly of the mineral industry. The first World War gave to Spain the advantages of a neutral country situated near to the belligerents. Foreign demand stimulated a rapid growth in the coal and mineral and metallurgical industries, and enabled the country to reduce its debts abroad. The gains were unequally distributed; some individuals made great fortunes, while the rise in nominal wages was not always sufficient to keep pace with the rise in the cost of living. Yet if a rough estimate of the national per capita income can be trusted Spain had reached a level in the postwar period above that of many European countries, not far below Germany and France. The situation was full of peril for the government. A depressed class rises in revolt, not when its condition is steadily miserable, but when improvement has begun, and when it feels or fears a check to its progress upward.

GROWTH OF OPPOSITION TO THE MONARCHY

Revolts of labor, violent in action and reaction, became chronic. New parties developed, revolutionary in character and informed with real vitality. In Madrid, led by intellectuals, they tended to socialism; in Barcelona, long a hot-bed of discontent, they tended to anarchism and direct action. The election of 1919 gave a Cortes which voiced the popular discontent; Spanish deputies termed their own country "more Moor than Latin," "the Russia of the West," "a rotting carcass in the last stages of decomposition." In 1923 the king abolished even the forms of the constitutional monarchy, and established a military directorate under Primo de Rivera. The new director was at least efficient in practical affairs. One of his first acts, a rule that all civil servants must work from 9 to 2, and must register before 9:15, led to the appearance in the offices of many whom no one knew and for whom no seats were provided; some held, it is said, 15 different salaried positions. Afraid of the growth of an angry opposition by the people the king at last dismissed the dictator, but too late. The elections of 1931 were a sweeping victory for the revolutionary elements, and Alfonso, without actually abdicating, sought a refuge abroad.

BEGINNING OF AGRARIAN REFORM

Meanwhile great social problems were pressing for solution. The rural cultivators, now better organized to voice their discontent, demanded relief from the extortions of middlemen and of village usurers, and asked to have shared among them some part of the great estates which were so largely uncultivated. Laborers demanded a minimum wage on which they could live, and some limit to their working hours.

Warned by the signs of the times, even the old monarchy passed some measures of social welfare. A decree of 1918 established a commission to arrange for allotments to laborers of small plots of ground taken from village commons or from land not already under cultivation, and proposed to settle colonies, organized for cooperation in production and consumption, on vacant territory. The next year, against a storm of protest, a decree established a working week of 48 hours for agricultural laborers, with a limit of 8 hours a day. Amended soon afterward to permit an extension of the working time to 10 hours, and scarcely capable of practical execution under the circumstances, this decree and others like it were at least significant as gestures, indicating recognition by the government of the need of reform. Some of the great landlords transferred small lots to laborers, on a long lease with the prospect of acquiring full property right in time.

AGRARIAN REFORM OF THE REPUBLIC

The republic which assumed power as a result of the bloodless revolution of April, 1931, found its problems, difficult enough at best, intensified by the serious economic depression of the period. The new constitution, doctrinaire and extreme in its refusal to recognize traditions and actual conditions, proved in operation to be a clumsy instrument which had to be suspended just as old constitutions were suspended under the monarchy. The party in power was split by acute differences of opinion, and had to face a bitter opposition of those attached by political and economic interest and by religious conviction to the old régime.

The law of agrarian reform, of September, 1932, was the most important act of the republic. It applied only to those provinces

in the south where conditions were worst, an area containing over a quarter of the total population, and including over a million families living from the soil. Of these nine-tenths did not own enough land to support a family decently. According to the estimates 245,000 had no land; 594,000 owned up to 12.5 acres, of whom most had holdings little over 2 acres in extent; 74,000 owned between 12.5 and 25 acres, even this last amount said to be too small for the proper support of a family if the land was not irrigated.

To get land for these families the government proposed to confiscate without indemnity the land of those who had raised a revolt against it in one of the provinces, and land held by *grandees* of Spain who had ever exercised their privilege to sit as senators, or to remain covered in the presence of the king.* From these sources the supply of land was not sufficient to endow the small cultivator. The law proposed to get what more was needed by exercising its right to condemn land, paying in return an indemnity (little cash, mostly bonds) graduated in amount according to the taxable value of the particular estate, paying nominally full value for a small property, only a quarter of that for a very large one.

LANDS SUBJECT TO CONDEMNATION

Land subject to condemnation was defined under a number of different heads. It is worth while to note some of these in detail, to show the spirit of the law and at the same time to suggest some of the difficulties it faced in practical application.

Latifundia were the curse of the country. On that point there was general agreement. But how large must an estate be to be *too large*? Obviously the answer would be different according to the physical conditions (soil, rainfall, altitude) and the crop—to say nothing of the persons to whom the question might be referred. The legislators contented themselves with setting broad limits within which local authorities were to set the permissible maximum; any acreage exceeding that was subject to expropriation. On irrigated land an estate might not exceed 25 to 124 acres.

* Ninety-nine *grandees*, owning altogether some 1,400,000 acres, were affected by the reform. Some 660,000 acres were subject to confiscation, but only a third of this had actually been taken in 1934.

The maximum on land not irrigated was, for vineyards, 250 to 370; for olive orchards, 370 to 1,240; for land used for fodder crops, 740 to 1,480; for plowland and pasture, 990 to 1,850. The law settled as best it could the complications arising when the land was used for a variety of crops, or was held by joint owners.

The figures cited will seem large to an American reader, but it must be remembered that the part of Spain affected has in general a scanty rainfall and necessarily must pursue extensive, not intensive, agriculture. They indicated, at least, the excessive size of existing latifundia, and the unhappy position of the mass of the landowners, holding each but a few acres.

Mere size was not the only criterion by which the law judged the right of an estate to be exempt from confiscation. Model farms of any size were exempt, but on "land uncultivated or manifestly badly cultivated" that part which would give a better yield in the hands of small cultivators was to be given to them. Lands which could have been and should have been irrigated fell under the ban. Finally, to choose one more illustration, lands which were not cultivated directly by their owners, and which in view of the circumstances of their acquisition and the personal conditions of the owners "should be presumed to have been bought for speculative purposes, or with the sole purpose of getting the return from their rental" were likewise subject to expropriation.

CONDITIONS LEADING TO CIVIL WAR

The sketch given above of the law of agrarian reform must have suggested to the reader that the law was doctrinaire in character, framed by theorists rather than by practical administrators. It could have been carried into effect only with the help of a great corps of officials, including many trained specialists, and would at best have required years for its execution. The times did not permit such deliberate procedure. In many places the country people invaded the great estates and tried to establish themselves against the armed opposition of the rural guards. Even those who were granted land by the government were dissatisfied, since in accordance with socialist ideals they were denied the rights of individual proprietors and became merely farmers under the state. The law, in concentrating on the great problem

of the latifundia, roused discontent in northern Spain, where people demanded the reform of other evils. The conditions led to a conservative reaction (1933) which sought to undo many features of the reform, and when the radical element returned to power (1936) and held fast to its extreme principles, it maintained itself only against active opposition and amidst growing disorder. Francesco Franco, chief of the general staff, banished by this government to the Canary Islands, in July, 1936, flew to Morocco and raised the flag of revolution. Supported by the propertied classes, by the church, and by Italy and Germany, he ended a civil war by his victory in 1939. Spain was left a country embittered by dissension, with insistent problems—political, economic and social—still pressing for solution.

QUESTIONS

What indication of conditions is furnished by the movement of population after 1800?

How was land tenure reformed, and with what results?

Sketch the distribution of property in land after 1900.

Illustrate the backward agriculture of the great estates.

Illustrate conditions of labor on them.

Contrast and explain land tenure in the north. Illustrate its faults.

Explain the backwardness of the mineral industry; compare mineral resources.

What were obstacles to manufacture, and the results?

Illustrate the conditions of urban labor before 1900; of social legislation.

Illustrate political conditions about 1900.

Who were the *caciques* and how did they operate?

Contrast military and social policy.

Illustrate serious conditions of life about 1898.

Illustrate improvement, political and economic, thereafter.

Sketch conditions leading up to the flight of King Alfonso, 1931.

Sketch the beginnings of agrarian reform.

What was the reform projected by the republic, and what were the evils which it was designed to remedy?

Indicate the doctrinaire character of the law, and the difficulty of executing it.

Sketch conditions leading to the revolution of 1936-39

READING

References below are restricted to S. de Madariaga, *Spain* (London, 1930), an admirable book on recent history and conditions. Reading may be extended to any extent desired in the periodical literature, in which much attention was paid to Spain during the war with the United States, 1898, during the first World War, and during the revolution.

Political history of the nineteenth century. (Madariaga, chap. 6, pp. 84-109.)

Education. (Madariaga, chap. 7, pp. 110-126.)

Agriculture. (Madariaga, chap. 9, pp. 148-161.)

The agrarian question. (Madariaga, chap. 12, pp. 191-203.)

Industry and trade. (Madariaga, chap. 10, pp. 162-182.)

Labor. (Madariaga, chap. 13, pp. 204-219.)

Clericalism. (Madariaga, chap. 14, pp. 220-236.)

Militarism. (Madariaga, chap. 15, pp. 237-245.)

Alfonso XIII. (Madariaga, chap. 11, pp. 183-190; see chap. 23 ff. for reign of this king.)

CHAPTER XXXII

Ireland to 1800

GEOGRAPHY AND PEOPLE; TRIBAL ORGANIZATION

Ireland has an area slightly greater than that of the State of Maine, less by one-third than that of Pennsylvania. Geographically isolated, on the western edge of Europe, it has less variety in fauna and flora than Britain to the eastward; there were no snakes on the island, although the statement of the chronicler that they died if brought there remained to be proved. Harried by the Northmen, it was not, as was Britain, permanently settled by them; such ethnic invasions as reached it came late and with their energy spent.

The island, therefore, still kept in the Middle Ages its Celtic population. They still kept many characteristics of a tribal organization, in which blood relationship was the important feature determining ranks and classes. The smallest group, the family under the patriarchal control of the father, was a unit in a much larger group including all descended from a common male ancestor and bearing his name. Marriage was by capture or by purchase. Blood vengeance, a common feature of tribal society, involved the groups in constant conflict. Each group, regarding others as foreign and more or less hostile, elected a chief to represent its interests and lead it in war.

Mixed with the purely tribal element of blood relationship an economic element had crept in to undermine the independence of the smaller tribesman and increase the power of the chiefs. The little man, impoverished by war, by the theft or death of his cattle, and by the contributions which he must make to fines levied on the tribe, had to borrow stock from the well-to-do. Cow loans, in forms minutely regulated, reduced the borrower to a position of unhappy dependence, different in form from that of the English serf or villein, but less tolerable in fact.

CONDITIONS OF NATIVE LIFE

Receiving the moisture-laden winds from the west, Ireland has a heavy rainfall. The topography of the island hindered drainage, and rendered more than a quarter of its surface a waste of water and bog. Grass was the one crop which grew in profusion. The people were engaged in a husbandry almost purely pastoral. They lived on the milk and flesh of their herds and clad themselves in the wool of their sheep.

English observers described them as wild barbarians, with long hair, shaggy beards, and little clothing, riding bareback without armor, with slings, darts and axes for weapons. They wore shirts washed in saffron, "because they never put them off till they were worn out." They were "barbarous and most filthy in their diet," boiling flesh and entrails and swallowing them with "whole lumps of filthy butter." They slept in a circle on the ground, feet to the fire, naked except for their mantles, "under the canopy of heaven or in a poor house of clay, or in a cabin made of the boughs of trees and covered with turf, for such are the dwellings of the very lords among them."

THE ENGLISH CONQUEST

Christianity had been introduced by St. Patrick, 432, but the island remained for centuries almost isolated from the rest of Europe. In 1169 a band of adventurers, Norman and Welsh, got a foothold on the coast, and a frontier war along the eastern edge of the island filled the later centuries of the Middle Ages. By 1500 the English king exercised real authority in the eastern and smaller part, was recognized as overlord by Anglo-Irish nobles in another part, and counted for nothing in the third part, still held by the wild Irish, divided into some 60 tribes. The sixteenth century witnessed the completion of the military conquest, and raised the problem which was to persist for centuries to come, what was to be done with the island now that English rule over it had been assured.

The English had already had to face this problem. Conditions were not like those which they later met in India and in other parts of the world. Both English and Irish were whites, both were Christians, until the English reformation both were Catho-

lics. Amalgamation of the two peoples appeared inevitable. The English were not strong enough to do as some suggested, drive the Irish entirely from the island, as the Moriscos were later driven out of Spain. They were not numerous enough to impose their culture on the natives. So even in the sixteenth century they had begun the process of plantation, bringing over from Britain settlers in number sufficient, they hoped, to assure their ascendancy and make the island English rather than Irish.

CONFISCATION AND PLANTATION

The Irish were living under tribal law, the English were living under feudal law. Interpretation of land tenures in one system in the terms of the other was difficult. At first the English came near to the facts of the case in recognizing that the Irish chiefs did not own the lands from which they got their revenue, but extorted it from their dependents either as creditors or as political overlords. Later the view changed to accord conveniently with English interest. The common Irish were regarded no longer as owners but as mere tenants of the chief. The lands of a lord in rebellion could be confiscated by the crown, and afforded great areas which could be granted to British settlers, under whom the common Irish would remain as mere tenants or laborers. Systematic colonization had begun in the sixteenth century, and continued, with interruptions and in various forms. One party proposed a policy which would have removed the Irish from the settled land, and restricted them to "reservations," as in the Indian policy of the United States later. Others, including Francis Bacon in his essay "On Plantations," opposed this policy, and it was never realized in its extreme form, although it was approached in Ulster, the northern province largely settled by Scots. When intervals of peace hindered confiscation, search was made for old charters which would empower the king to exercise property rights; a whole class of "land-spies" arose to assist in this process.

Up to 1641 the plantation policy had already gone far to eliminate the rights of the small Irish landholder, but had left still a large part of the country in the hands of Irish proprietors. That year marked the outbreak of a great agrarian revolution. The upper classes among the Irish demanded for themselves a

return to power, which would ensure the independence of the Irish parliament and of their Catholic church; the common people wanted back their land. Inevitably the revolt was bloody and cruel. The English of the time counted the Protestant settlers killed by the hundred thousand; a moderate estimate would put the number at 25,000.

REBELLION, REPRESSION AND FURTHER CONFISCATION

The Irish rebellion of 1641 came at the time of the Puritan revolution against Charles I in England, and was repressed by the leader of the parliamentary forces, Oliver Cromwell. In less than a year, with inferior force, he took a score of strongholds and subdued almost all Ireland. The repression was marked by merciless severity; to the present day "the curse of Cromwell" lives in the speech of the Irish peasant. In the storm of Drogheda, in which he lost less than 100 of his men, he gave no quarter, slaying all found in arms and all priests, over 3,000 in the total. The English Petty, perhaps the first of modern economists and a shrewd statistician, estimated that between 1641 and 1652 about a third of the Irish population were wasted by "Sword, Plague, Famine, Hardship and Banishment."

The rebellion offered an unexampled opportunity to extend the process of confiscation. Of a total area of 20 million acres in the island, 11 million were taken from their former owners. Of some 8,000 Catholic landowners Cromwell took from all but 26 the land which they held east of the river Shannon, and though some obtained restitution it was estimated that after the English restoration (1660) there were at most 1,300 Catholic landowners left in all Ireland. The plan was to restrict Irish landholders to the most western of the four provinces, Connaught, and to remove thither as many as possible of the native Irish. Altogether some 50,000 were transplanted. Some 40,000 sought refuge abroad. The reader of later history finds men with Irish names appearing as Marshal of France, Prime Minister of Spain and of Austria, President of a South American republic.

Confiscated land was granted to soldiers of Cromwell's army, and to speculators and adventurers from Britain. But drastic as was this Puritan settlement it left Ireland still an Irish country. Of

500,000 inhabitants 414,000 were Irish, only 86,000 British. Ulster, the northern province, had nearly 40% of English and Scots, Leinster 15%, the other two provinces under 10%.

The "Glorious Revolution" of 1688, which brought William and Mary to the throne in England and established constitutional government there, was attended in Ireland by another revolt of the native Catholic majority against their Protestant and alien rulers. The battle of the Boyne quelled this revolt so effectively that in the eighteenth century, even when the Stuarts made attempts to regain the English throne (1715, 1745), the Irish, exhausted, did nothing to further their efforts. As a result of the revolution confiscation reduced still further the amount of land held by Catholics, leaving in their hands little more than one-sixth of the area of the island.

REPRESSIVE LAWS AGAINST CATHOLICS

The Britain Protestant minority sought to assure its position by a series of laws enforced by drastic penalties. In the judgment of sober historians the laws were designed to make and keep the Catholics poor. Catholics might not add to the land left to them, by gift, devise or purchase. If one secretly bought land of a Protestant the informer became its proprietor. Their right to lease land on favorable terms was restricted, but they might take over unprofitable bog, to reclaim it for the landlord. The estates of Catholics must be divided equally among the sons; if the eldest son turned Protestant he took the whole estate, much of it during the life of the father. A Catholic might not enter the law, and if he was an artisan might not (except in the trades of flax and hemp) employ more than two apprentices.

Catholics had already, with the exception of officers protected by treaty, been disarmed. Now they were forbidden to enter the gunsmith and like trades, or to settle in Galway or Limerick, where arms were manufactured. A Catholic might not own a horse fit for war service.

Catholics might not hold any office, civil or military, or serve on a grand jury. They could not vote unless they had abjured the Stuart pretender. They could not teach any children but their own, or send their children abroad to be educated. Catholic orphans were to be brought up as Protestants. Marriage of

Catholic and Protestant required permission of both ecclesiastical and civil authorities.

As time passed without further revolution some of these laws were made milder, and they were not so strictly enforced. There they were, however, on the statute book, to stimulate spies, informers and blackmailers, and to foster resentment in the hearts of those subject to them.

ENGLISH RESTRICTIONS ON IRISH ECONOMIC DEVELOPMENT

The laws cited in the preceding section were passed by the Irish parliament and were aimed against only one, though the larger part, of the Irish people. Commercial restrictions imposed by England hurt the whole people, Catholic and Protestant alike. English graziers complained of the competition of cattle fed on the lush grass of Ireland, and obtained a prohibition of their importation; shut out of the English market Irish graziers had to salt their beef and export it to France. A woolen industry, started in Ireland by English settlers, was thought to threaten the English manufacture. Not only were customs duties which proved to be prohibitive established against it in England, but, further, Ireland was forbidden to export its woolens to English colonies. On the other hand the English did introduce in Ireland a linen manufacture to which the country was peculiarly suited, and which will be described later; but when the Irish endeavored to stimulate export by bounties the English imposed a countervailing duty. England, suffering from the destruction of her forests for the manufacture of iron, permitted the import of iron and timber from Ireland, and stimulated a rapid deforestation of the country. In a district where, it was said, a squirrel could formerly travel for twenty miles through the tree tops, not a tree was later to be seen. English opposition to any measures favoring the Irish was blind and unreasonable. When a proposal was made (1778) to allow the importation of sail cloth from Ireland it was violently opposed as leading to destructive consequences—while in fact import was allowed by a law of long standing! While the English forced the sale of their goods in Ireland they robbed the Irish manufacturer of all his markets, English,

colonial and foreign. In shipping the Irish, unlike the American colonists, were deprived of the benefits of the Navigation Acts, while they remained subject to the restrictions. "To sum up, Ireland had all the disadvantages of both a colony and a foreign country without any of the advantages of either."

BACKWARD ECONOMIC AND POLITICAL CONDITIONS

After this survey of British policy we return to a study of the conditions of life in Ireland in the eighteenth century. The British had taken from the natives the property rights to most (roughly five-sixths) of the land, leaving the Irish as dependents who must look to them for their livelihood. Outside of agriculture there was little chance to make a living. Except the Ulster linen industry there were no manufactures of importance. Towns were few and poor, with industries throttled by guilds to which a Catholic had no access. Internal trade was stagnant. The government had built some good highways, partly for military purposes, but the native roads, "boreens," were mere tracks, barely practicable for a wheeled vehicle. Outside of Ulster money scarcely circulated in the country districts. Exchange was by barter, and labor was paid in kind. Laborers had their credits and debits marked on notched sticks, tallies. Arthur Young found that "the poor wretches have very little cash for their year's work," and thought that "keeping accounts with the poor is a cruel abuse." He saw people walking ten miles to a market to sell a yard of linen or a fleece of wool, a pair of chickens or a lamb. Shops, charging double price for credit, would sometimes refuse to take cash. Local usurers, "gombeen men," exacted rates of 50% and more. Wild-cat banks sprang up and failed, but there was no really sound and trustworthy bank outside of Dublin.

Laws were made by an Irish Parliament controlled by the great Protestant landlords, who named the representatives not only from the country districts but also from a large part of the towns. The executive, appointed by the British government, had great power, but as Parliament in the course of the eighteenth century grew more independent had to assure his dominance by

systematic corruption. The landed magnates traded seats for offices, for pensions or for cold cash. In the election of 1776 seats sold for \$10,000 and upward. The American revolution had a marked reaction on the position of Ireland, stimulating the independence of the Parliament and forcing a reform of British economic policy in favor of Irish interests.

ABSENTEE LANDOWNERS

Landed proprietors, the ruling class in Ireland, could be divided into three classes: (1) absentees, a considerable proportion of the whole even in number and still more in acreage, since some of them were owners of vast estates; (2) resident gentry; (3) lesser proprietors, "half-gentlemen," a social class which included others not owning land but active as agents or middlemen in its management.

The largest part of the absentees lived in England, and were seldom or never seen in Ireland. Heading the list were titled lords and ladies who drew princely incomes from their Irish rentals, some over \$100,000, more over \$50,000, many over \$25,000. An estimate of 1745 named 92 individuals in this class, with an aggregate income from their Irish estates of over \$1 million. Below them came others who lived generally abroad, but occasionally visited Ireland for a month or two, with smaller individual and aggregate incomes. Altogether the Irish had to remit each year to England some \$2 million to absentee landlords, and in addition nearly half a million in the form of pensions. The figures may not seem large at the present day but are impressive when compared with the incomes, to be described later, of the Irish common people, from whose labor and abstinence they were derived. Remittance was made more difficult, of course, by those features of English policy described above which blocked Irish exports. Yet the chief evil of the situation was the removal of the landlord from actual contact with the laborer who produced his income, and the transfer to cold-blooded middlemen of the task of collection. Some absentees did concern themselves with the economic improvement of their estates, but too many justified Arthur Young's indignant complaints against "the lazy, trifling, inattentive, negligent, slobbering, profligate owners of Irish mountains."

RESIDENT GENTRY

The resident gentry, with substantial estates, lived in "great houses," often deserving the name of castles, in the midst of parks, with stabling for many horses and often preserves for game. They devoted their lives in general to sport and politics, leaving the active management of the estate and business affairs to their agents. As they had done little to earn their position, and their descendants had little economic training to maintain it, they were likely to be spendthrift and careless, and fell easily into debt. Miss Edgeworth, in the story *Castle Rackrent*, sketched types of Irish gentry. Sir Patrick could sit out the best man in Ireland in a drinking bout, and was so profuse in his hospitality that he had even the chicken house fitted to entertain an overflow of guests. His successor, Sir Murtagh, was so litigious that he had a law suit pending for every letter of the alphabet; he married a lady of the Skinflint family, and both agreed in extorting the utmost possible from tenants and laborers. Sir Kit was a gambler and an absentee, who endeavored to repair the family fortunes by marrying an heiress whom he kept practically imprisoned. Last of the line was Sir Condy, bred to the bar, who tossed a penny to choose a wife, and died of fever after swallowing a whole horn of punch on a bet.

The reader will not be misled into thinking that every Irish landlord followed one of these types. It is safe to say, however, that most of them made a poor economic return for the privileges of their position. They did not study and teach good agriculture, and invest, instead of spending, the funds needed for its improvement.

MIDDLEMEN; "HALF-GENTLEMEN"

Still less respectable were the middlemen who generally intervened between the landlord and the actual cultivator. The absentee always by necessity, the resident gentleman often by choice, either had an agent to manage the estate and collect the rents, or farmed out the estate to a contractor who guaranteed a fixed sum and got what surplus he could from the cultivators. The father of Lord Antrim, who owned 173,000 acres in Ulster, had granted perpetual leases for \$40,000 a year; the tenants, in the

time of the son, were actually paying 8 times that sum to the lessees. Between the owner and the occupier there were often three or four separate middlemen. This division of profits, combined with the restricted period of time through which the contracts usually ran, deprived the cultivator of any permanent interest by a superior in his welfare, or indeed in the welfare of the land itself.

These middlemen, whether agents or contractors, came from a class below the gentry, whose vices they imitated but whose virtues they lacked. "The characteristics of a middleman," wrote Miss Edgeworth, "were servility to his superiors and tyranny towards his inferiors." They kept packs of half-starved hounds for hunting, raced, gambled, and were by common repute the hardest drinkers in the country. Arthur Young termed them "the most oppressive species of tyrant that ever lent assistance to the destruction of a country," "rapacious and relentless," "the class of little country gentlemen; tenants who drink their claret by means of profit rents; jobbers in farms; bucks; young fellows with round hats edged with gold, who hunt in the day, get drunk in the evening, and fight the next morning."

AGRICULTURE

As said in the first part of this chapter the native Irish husbandry was almost purely pastoral; the people lived off their flocks and herds. In the period of the British plantations the government sought, with little effect, to impose settled agriculture. What the government failed to accomplish the potato did. Introduced in the island shortly before 1600 it spread rapidly and soon became the mainstay of the population, the South American tuber became the "Irish" potato. Grain was raised to some extent as a cash crop and to furnish the raw material of *usquebaugh*, "water of life," whiskey. The climate was much better suited to grass than to grain, and grazing remained an important branch of the agricultural economy. The humble cultivator kept his cow; the great proprietor raised cattle and horses on a large scale. When grazing became peculiarly profitable in part of the eighteenth century, by reason of a cattle plague on the Continent and other factors, the Marquis of Donegal, one of the largest proprietors in northern Ireland and an absentee, evicted

the whole population of a vast district, confiscating what improvements the tenants had made and turning the land to pasture.

Arthur Young found some farms in Ireland which won his approbation by an efficient system of cultivation and cropping, and by a wise expenditure of capital. There were exceptions, the more praiseworthy by their contrast with the conditions in general. The clover and artificial grasses and the root crops which had so greatly improved English agriculture were seldom seen except on the estate of a gentleman farmer who himself directed their cultivation.

COTTIER LAND TENURE

The land of Ireland was owned in great estates but was cultivated in little pieces. Large undertakings, whether directed by the owner or by a capitalist farmer of the English type, were in number relatively few in the total. They were sufficient in acreage to offer a considerable demand for agricultural labor, but even so gave rise to many times their number of small holdings, for the laborers were paid not in money but by the grant of little pieces of land, which they cultivated for their own subsistence. Mixed with these laborer-cultivators were other tenants, commanding more of their own time and holding somewhat larger pieces of land to work for themselves. It would be unprofitable to attempt here to distinguish classes of tenants, so various in different places and different times. They will be merged in an account of the general features of the cottier tenure of the eighteenth century.

A cottier held his land, sometimes at the will of the landlord's representative, but commonly on a year-to-year tenancy, subject to a six-months' notice to quit. The distinction was not so important, as arrears of rent for eighteen months were often allowed to accumulate, that the tenant might be subject to eviction at any time. The terms were hard. They retained such feudal features as duty-work (unpaid labor), duty-fowls and other payments in kind. They lacked features of the English common law which offered the tenant some protection against his landlord. The point may be illustrated by explaining what Miss Edgeworth meant when she said that Sir Murtagh Rackrent was always

canting, driving, pounding and replevyng. Canting was the offer of a tenant's holding to the highest bidder, without any regard to the tenant's situation or to improvements which he had made. Driving was the levy on a tenant's stock to force payment of rent. Pounding was a levy on strays; Sir Murtagh made a good income off trespasses, and would not repair his fences for that reason. Replevyng would more properly be called distraint, the seizure of a debtor's goods in satisfaction of arrears. The landlord, himself probably as justice of the peace a representative of the law, could distrain by summary process and need pay no damages if his claim was unfounded. He could distrain growing crops and could sell the debtor's goods to pay himself, both privileges in opposition to the English common law.

CHARACTERISTICS OF COTTIER TENURE

The cottier tenure may be better appreciated if compared with some others. The peasant owns his land, and may keep all that he gets. The medieval villein paid dues which in general (although not always) were fixed by custom. The English farmer was a business man with some capital of his own, who could stand out for a fair rent, and refuse to offer more than he could pay. The essential feature of the Irish situation was the introduction of the forms of money contract and of competition into a society not competent to use them to advantage. The native Irish, by force of their history ignorant and thriftless, encouraged to rapid multiplication by the cheap food of the potato, and by the lack of a standard of decent living, must have land on which to live, and would promise anything to get it. They could not, as they could in England, look to the parish to protect them from starvation; there was as yet no system of public poor relief in Ireland. Bad laws, giving the landlord or his agent excessive power in the collection of debt, encouraged the acceptance of tenants making extravagant promises, beyond their power to fulfill. The landlord hoped always to collect the arrears, and would refuse a good tenant, offering only the most that could fairly be exacted from the land. The amount paid in rent by these insolvent cottiers was determined by social rather than by economic considerations; the landlord would threaten with all the penalties

leading up to the decisive eviction, the tenant would plead and cajole and make promises without limit if he were given another chance.

BUDGETS OF COTTIERS

Arthur Young, with his passion for facts, on his tour of Ireland in 1777 collected figures of cottiers' budgets which are reproduced, with some condensation, in the table below.

<i>Receipts in Dollars</i> (Shilling = \$0 25)					<i>Expenditures</i>				
	A	B	C	D		A	B	C	D
Labor	53 00	24 00	45 00	41.75	Rent, home				
Calves	7.50	10 00	7.50	3 75	plot	15.00	22.00	7.50	17.00
Pigs	5.00	10 00	3.75	10 00	Grazing,				
Poultry	1.25	3 75		2 50	hay	20.00	10.00	23.75	25 00
Butter				20 00	Turf	3.50		5 00	3.75
Total	66.75	47.75	56 25	78 00	Clothing	18.75	5.00	22.00	9.50
Expend- itures	59.00	40 00	61.00	59 75	Tools	1 25	1.25	1.25	
Differ- ence	7.75	7 75	—4.75	18 25	Tax	0 50	0 50	0.50	0 50
					Tithe		1.25	1.00	2.75
					Priest				1 25
					Total	59.00	40 00	61.00	59.75

These cottiers held an acre or an acre and a half of land by their cabin, on which they raised potatoes, and in some cases oats for bread and flax for clothing. They worked out their rent for the garden and grazing land, commonly at the rate of \$0.10 a day; differences in the receipts for labor were due mainly to the varying number of days worked, and to earnings of others in the family. In Limerick, "They all keep a pig, a dog, two cats and some poultry"; cows and pigs were their mainstay in adding to their labor income. Instead of cutting or buying turf for fuel many stole wood from the hedges. Most spun their own yarn of flax or wool, buying the raw material and paying for the weaving. Three of the four budgets appear to show a surplus, available for the purchase of such items as salt, flour, soap, candles, for church dues (the tithes went, of course, to the established Protestant church), and for tobacco and whiskey; but Young warns us that if a balance was attained it was at the expense of adequate food and clothing. And in view of conditions to be de-

scribed later these budgets appear to present too favorable a view of conditions rather than the reverse.

AGRICULTURE OF THE COTTIER

On these little garden plots, of an acre more or less, the spade, was the only implement of husbandry and the potato was the usual crop. Young described the family of cottier A as living on potatoes and milk for ten months in the year, on potatoes and salt in the two other months; they had a little butter, and meat on ten Sundays. The family of cottier B lived on potatoes for at least eleven months, on coarse bread of oats or barley in the other month. They drank their milk, as there was no sale for that, and usually no market for butter. They must refrain in general from eating the increase in their poultry and live stock, for on the sale of that they must depend for means to pay the rent. The potato was their mainstay. Young figured that with the average yield of potatoes an acre * would support eight persons. Each one in the family would consume some seventeen pounds of potatoes a day, when they were plentiful, giving the parings to the pig.

Where plows were used, on larger holdings or by cooperation among the smaller tenants, they were of the primitive type, mere sticks of wood scratching the ground. Even so they had to be drawn by three or four of the little horses, harnessed abreast, and required the service of several men: one man walking backwards, leading the horses and beating them over the head, one man holding the plow, a third clearing the wooden plowshare with a spade, sometimes a fourth pressing down the beam so that the share would remain in the ground. Young reported half an acre plowed as a day's work. In spite of a government prohibition dating back to 1635 horses were still harnessed by the tail in some regions; wool was plucked from live sheep, and feathers from live geese.

Sometimes oats and pease were grown to give the land a rest from the potato; among the pease weeds were held to be desirable

* The Irish "plantation" acre, in which the measures of this period are given, was equal to 16 English. In English measure an acre would support five.

"by way of sticks." In general, however, potatoes were grown in the same "lazy beds" year after year, and exhausted the soil. Regulations for manuring with cow dung were common, but in backward districts of the northwest, where seaweed was held to be a more convenient fertilizer, dung heaps accumulated to such an extent that the cabins were actually moved away from them. "Land burning" was a pernicious practice, forbidden by law and naturally opposed by the landlord, but nevertheless persistent. The tenant would pare and dry the sod, burn it and spread the ashes; he would get enormous crops for a few years, but leave the land then barren.

RUNDALE, SCATTERING OF LAND FRAGMENTS

Rundale was a form of tenure which contributed to the ills of Irish agriculture. A group of persons, sometimes as many as 20, or even 100, would take a tract of land as joint tenants, would set apart some of it for a grazing common, and would divide the arable among themselves. With the growth of numbers there were redivisions. Each man wanted a piece of each kind of land. The result in a few generations was a mixture of holdings small in themselves and further splintered into separate fragments. As illustration, a compact farm of 205 acres in two generations of cotenancy was split into 29 holdings in 422 lots; the average holding included 4 acres of arable in 14 different lots, plus 3 acres of common pasture. On the Bingham estate, late in the nineteenth century, a farm of less than 10 acres consisted of 25 fragments, of which one was about 15 feet square. A field of one acre might belong to a dozen different persons, each owning a particular plot. A man in County Kerry said that when he first took possession of an estate a cow could not be tethered on a pasture lest it eat more than its share of grass; it had to be held by a cord, and even so quarrels were frequent.

A parliamentary commission reported in 1845 that nearly one-tenth of Irish land was held in intermixed fragments associated with the rundale system.

THE IRISH CABIN

This fragmentation of the land was associated with a growth of population which was not restricted by any decent standard of

living. "Every patch produces a new family; every member of a family a new patch" (1822). In this regard the character of the Irish cabin was of great importance. Petty, writing in 1671, distinguished three classes of habitations: 160,000 families had no fixed hearths, 24,000 had one chimney and 16,000 had more than one. In the ordinary cabin, without a chimney, butter, cheese or yarn of good quality could not be made, "by reason of the Soot and Smoaks annoying the same; as also for the Narrowness and Nastiness of the Place; which cannot be kept Clean nor Safe from Beasts and Vermin or from Damps and Musty Stenches, of which all the Eggs laid or kept in those Cabbins do partake." Young, in his tour of 1777, found conditions still the same. The ordinary cabin had walls of mud kneaded with straw, rarely over 7 feet high, not always 6 or even 5. Its roof was of rafters covered with straw or potato stalks or heather or sods or a mixture of those materials; it looked like a weedy dunghill, on which the pig grazed when he could reach it. A heavy tax on window glass, not repealed until 1845, forbade any glazed openings. The floor was often sunk below the surrounding surface, in the pit from which mud for the walls had been excavated. In the single room "the complete family of cows, calves, pigs, poultry and children pig together"; as to keeping the cow in the cabin a native said, "it is more convenient when one wants a drop of milk." Many cabins had for furniture only a pot for the potatoes, some sort of table, and a broken stool or two, not always beds; the family sometimes shared the straw with their live stock.

LOW ESTIMATE ON MATERIAL SURROUNDINGS

Young found the cost of constructing such a cabin to vary in different localities from \$15 to \$20 or \$25 or more. Makeshift hovels, such as those occupied by a depressed class of laborers, the "spalpeens," could be put up for much less, and a young married couple could begin breeding in one of these, or in an addition to the parental cabin or partition of it. The Irish retained strong elements of the tribal system, from which they were not far removed. They rated high the element of human companionship, family, relatives and friends; they rated low their material surroundings. Sir Horace Plunkett would explain the fact that Irish immigrants to the United States settled not in the

rural districts but in "the tenement house with all its domestic abominations" because it offered them the social order to which they were used in Ireland. The Irishman, he said, is not so much interested in a home, its improvement or adornment, as in a social order. Arthur Young, interested mainly in economic fact, noted still in different parts of Ireland that the love of music and of dancing was almost universal. A poor cottier would pay a dancing master sixpence a quarter to teach his family the steps. The Ulster weavers, poor as church mice, would still each one keep a hound, and follow the pack in hunting hares; "to run like a weaver" became proverbial.

EXTREME CONDITIONS ON THE WEST COAST

Cobbett said in 1843 that there were three countries under the British crown. "One of them had meat and bread and knives and forks, the other had oatmeal and brose [porridge] and horn spoons, and the third had only potatoes and paws." Ireland was, of course, the country of "potatoes and paws." Lest the reader think that the picture of the Irish standard of life, as given above, applies to a small depressed minority rather than to the mass of the people, it may be profitable to view conditions where they were confessedly bad, measured even by the Irish standard. The district Gweedore, parish of Tullaghobegly, county Donegal, on the northwest coast, had in 1841 a population of 9,049. Among them they owned 1 plow, 1 cart, 16 harrows, 20 shovels and 32 rakes; they grew enough grain to pay the rent and provide whiskey from illicit stills, but "cultivated" mainly potatoes and cabbages. They had 243 stools, 93 chairs, 7 table forks (instead of "paws"); they had 2 beds of feathers, 8 of chaff, but in general slept naked on the straw. No woman had more than one chemise; some had none. The land, held in rundale, was scattered in little fragments. A field of half an acre was held by 26 persons. A tailor held land in 42 pieces, but said it would take a very keen man to find them, and had given up looking for them. Pasture land was let not by the acre but by the cow's graze, and even by the cow's foot (one-quarter graze) and by the cow's cleet (one-eighth graze). On the sea they used a *corragh*, a boat much like that described by Caesar as used by the Britons; it was made of basket work lashed together with horse hair and covered

with hides or tarred canvas. In such a frail vessel, measuring 9 by 3 by 2 feet, they could actually ship cattle, and could land in the surf on a rocky shore.

*FAULTS OF THE IRISH: IGNORANCE,
INTEMPERANCE*

Early Celtic laws were full of triads, subjects in groups of three, and, fanciful as it may seem, triads appear time and again in later Irish history. The triad of faults ascribed to the people was the three I's: Indolence, Ignorance and Intemperance.

Ignorance was inevitable under a system which refused to Catholics any aid in the instruction of youth, and which deprived adults of such practical guidance as might be given by a resident landlord. A man would work as a laborer for sixpence a day when he could earn twice that sum if he would treat his little holding as a garden instead of a potato patch. The superstitions still prevalent in Ireland, the common belief in fairies and in witches and other evil spirits, are a natural legacy from a long period of educational neglect. The people made highly creditable efforts to provide for the instruction of their children. Young found in operation many hedge or ditch schools, as they were called. They were held sometimes outdoors, as the names imply, but more often in a cabin or barn. The charge per child per quarter might be 2s. 6d. (say \$0.60) for instruction in reading, with added charges for such "extras" as writing and arithmetic. The master was usually incompetent, the pupils lacked a proper supply of books, pens and paper, yet in Tipperary Young found "every child of the poorest family learning to read, write and cast accounts." So late as 1874, however, one-third of the people were unable to sign the marriage register. •

Intemperance was and long remained a curse of the country. Dublin, according to Petty (1671) included 4,000 families, 1,180 ale houses and 91 breweries: in the next century one shop in three or one house in seven there was said to sell spirits; in the nineteenth century the people of Cork were said, with some Irish exaggeration, to spend half their time in making whiskey and the other half in drinking it. Worst in the towns, intemperance was bad in the country districts, where it offered some relief from the monotony of labor and of diet. Inclined to make the most

of every social gathering, the people commonly associated drinking with a marriage or a wake, with a market or a fair.

*INDOLENCE, ITS RELATION TO THE COTTIER
TENURE*

- From the time of Petty, Bishop Berkeley and Dean Swift, the Irish people have regularly been charged with indolence. They counted out of the working year not only Sundays but also many other holy-days, market days, wakes, and so forth. Young was told in many places that the people would "only work to eat" and refused to labor when food was plenty. Further, they did not work hard, it was charged, when they did work. Petty estimated one English laborer as worth three Irish; Young adopted about the same valuation; a royal commission, 1838, made the ratio one to five.

These comparisons may exaggerate the contrast of English and Irish but leave, at any rate, a great contrast to be explained. The matter is of prime importance. A country has no greater asset than its working people. If they refuse to labor, or labor negligently, a country, even with rich physical resources, is doomed to poverty.

At best the Irish, just emerged from the careless pastoral husbandry of a tribal system, would have needed time and training to adapt themselves to persistent labor. Deprived of economic leadership by a system which subjected them to a class of low-bred middlemen, deprived of ownership in the land they occupied, they lost, perhaps they never gained, the incentive to efficiency. In many districts of the south and west practically every tenant was insolvent, in arrears for rent beyond his capacity to pay. If he worked harder and earned more the land agent or middleman would take it. The arrears which left him hopelessly bankrupt were still some protection against eviction. There was an unceasing and unhappy contest between agent and tenant over the payment of rent. It was social and moral in character, rather than economic—threats on one side, pleas of distress and poverty on the other, nowhere a sound solution. Without question many tenants would have been able to produce and pay far more than they did, and would have been glad to do so if they had not known that it would merely lead to a rise in the rent and

the accumulation of new arrears. Bad laws developed in the Irish a bad economic character.*

CONTRAST OF ULSTER AND OTHER PROVINCES; THE THREE F'S

Ulster, the northern province, presented in many respects a contrast with the rest of Ireland. It received a larger proportion of British settlers, mostly Scots, and a larger proportion of the native Irish were driven out. The result can be realized from lists of the five most common surnames as they appeared in different counties in 1909:

County Down (Ulster) : Thompson, Smith, Campbell, Patterson, Martin
County Antrim (Ulster) : Smith, Johnston, Stewart, Wilson, Thompson
County Clare (Munster) : McMahon, McNamara, Maloney, O'Brien,
McInerney
County Mayo (Connaught) : Walsh, Gallagher, Kelly, Malley, Moran.

As a result of the difference in population Ulster had quite a different economic history from the rest of Ireland. Land tenure there realized the three F's which later were demanded so vigorously by other parts of the island. These three F's were:

Fair rent, within the ability of the tenant to pay

Fixed tenure, security from eviction so long as the tenant paid a fair rent

Free sale of improvements made by the tenant—no confiscation of them.

Ulster was subject to the same *laws* which governed land tenure in the rest of Ireland. The people, however, who offered themselves as tenants, were of a different class from the native Irish; they had some little property of their own, had certain standards of education and independence. They built up *customs*, which came to have almost the force of law, maintained by public opinion, and protecting the tenant from the abuses which prevailed in other parts of Ireland. The landlord could count on a definite sum, punctually paid. The tenant could count on

* Hearn, *Plutology*, 41, says that the Scots of an earlier time were "conspicuous for their incorrigible indolence," as notorious for their laziness as were the Irish later, and for the same reason: they were tenants at will, hopelessly poor, with no inducement to exertion. He notes the improvement following the introduction of leases for long terms in the Lowlands.

permanence, and on compensation for improvements if there were a change in occupancy. The tenant of even a little farm of ten acres would live in a real house with a slate roof, with decent furniture, would eat meat at meals and could hope to save money. Ulster custom worked in that province, but depended on that class of people for its success; it did not spread to the rest of Ireland.

MANUFACTURE

Ulster, again, was the only province in which in this period a manufacture of real importance was established. This was the linen manufacture.

The soil and climate of Ireland were well suited to the growth of flax. The division of the land into small tenancies offered the supply of labor and of personal attention required for the tedious processes of preparing the fiber. Flax for linen must be pulled by hand before the seed is ripe, then "retted" on damp grass and in water, then dried and "scutched," beaten with a wooden knife, then "beetled" to separate the fibers, then "hackled" or combed to prepare the fiber for spinning. The native Irish had learned to execute these processes in primitive fashion, and could weave linen in narrow strips, a foot or so wide. While the English discouraged the establishment in Ireland of a woollen manufacture which would compete with their own, they were glad to free their own land and labor from the cultivation and preparation of flax, and encouraged the growth of a linen manufacture in the sister island. A Linen Board, established in 1711 to further the manufacture by regulation, research, grants in aid and rewards for improvements, spent as much as \$50,000 to \$150,000 a year for these purposes. By the middle of the century the manufacture was well established in many parts of Ireland. Where the Board spent the most money, however, in the south, the industry, after a period of apparent prosperity, declined and languished; in Ulster, where the Board gave relatively little help, the industry took root and flourished. The contrast is explained by the difference in people and land tenure and in the system of exchange in the two regions.

Outside Ulster, down even to 1800, there was almost no circulation of currency in the rural districts. The cottiers were

compensated and paid their rent largely in kind, according to the notches on their tallies. The market towns were small and poor, with trade still largely by barter. An insolvent cottier had no capital and could scarcely be trusted with any. Under these conditions the linen industry, which involved not merely the preparation and spinning of the fiber, but also weaving, bleaching and sale of the cloth, presented grave difficulties. Capitalists, supported by the Linen Board, had to organize and conduct all the operations, and for that they were not prepared by technical experience. In attempting to impose an industry from above they wasted their capital.

In Ulster, where land tenure was on a real contractual basis, with payments in cash; where many market towns had grown up for the purchase and sale of goods; where there was therefore an opportunity for the rise of a class of small business men, the manufacture could be conducted differently. Markets for brown (unbleached) linen gave independent weavers an opportunity to sell their cloth and be quit of further responsibility. A class of drapers, small capitalists, arose to conduct the later processes; they bought the cloth, had it bleached (a process requiring some three months), and sold it in finished form. Even in Ulster the development of the manufacture was hindered by the lack of good credit facilities. Irish linen was exported almost altogether to England, partly because that country was the natural source of credit, partly because other exports were lacking to make up mixed cargoes for shipment to other countries.

QUESTIONS

What were outstanding features of the Irish tribal organization, political and economic?

Sketch climatic factors, and conditions of native life.

Sketch the course of the English conquest, and show the nature of the resulting problem.

Explain and criticize the policy of confiscation and plantation

Sketch the course of rebellion, repression, and results, 1641-88.

Illustrate oppression of the Catholics by laws of the Irish Parliament.

Illustrate economic restrictions on the Irish by laws of the English Parliament.

Illustrate backward economic conditions of the eighteenth century.

Distinguish classes of landed proprietors.

Illustrate faults of absentees; of resident gentry; of middlemen.

What was the general condition of agriculture?

Indicate the dependent features of cottier tenancy. Contrast other tenures.

Describe and explain the vicious features of cottier tenancy.

Illustrate from budgets characteristic features of cottier livelihood.

Illustrate characteristic conditions of cottier agriculture.

- What was rundale; to what results did it lead?

Describe the ordinary Irish cabin of the eighteenth century.

Explain acceptance of it by the natives.

Illustrate extremely low conditions in the west.

Illustrate and explain ignorance and intemperance of the Irish; their indolence.

Contrast and explain conditions in Ulster. What were the three F's?

Contrast and explain the course of linen manufacture in Ulster and in the south.

READING

The best books for collateral reading are by George O'Brien, *The Economic History of Ireland in the Seventeenth Century* (Dublin and London, 1919), and *The Economic History of Ireland in the Eighteenth Century* (Dublin and London, 1918). References below distinguish by date of publication. The student should if possible read some part of Arthur Young, *Tour in Ireland* (1776-1779), and will find Miss Edgeworth's *Castle Rackrent*, or *The Absentee*, both interesting and informing. H. S. Kraus, *Irish Life in Irish Fiction* (N. Y., 1903), is a guide to further reading of that sort. A bibliography of Irish economic history, in *Economic History Review*, 1931-32, 3:274-292, 402-416, is designed for the scholar rather than the ordinary student.

Origins of Irish land tenures. (F. Seebohm in *Nineteenth Century*, Jan., 1881, 9:19-36.)

Irish trade and industry in the sixteenth century. (S. M. Lough in *Journal of Political Economy*, 1916, 24:713-730.)

People, land and agriculture after 1600 (O'Brien, 1919, pp. 12-43.)

Trade and industry after 1600. (O'Brien, 1919, pp. 57-85.)

Desolation, 1641-60. (O'Brien, 1919, pp. 100-115.)

People, land and agriculture after 1660. (O'Brien, 1919, pp. 122-147.)

Industry after 1660. (O'Brien, 1919, pp. 173-197.)

Desolation, 1689-1700. (O'Brien, 1919, pp. 211-238.)

Population, famines. (O'Brien, 1918, pp. 9-23, 102-106.)

Economic and moral effects of laws (O'Brien, 1918, pp. 24-44.)

Land system and rural classes. (O'Brien, 1918, pp. 50-101.)

Agriculture after 1700. (O'Brien, 1918, pp. 107-135.)

Irish industries. (O'Brien, 1918, pp. 181-222, 269-289.)

CHAPTER XXXIII

Ireland since 1800

THE UNION, 1800; PERIODS IN LATER HISTORY

In 1800 the Irish Parliament, which had governed the country subject to the British crown, resigned its powers. For more than a century the Irish sent their representatives to Westminster, and were ruled by the Parliament of the United Kingdom sitting there.

The Union was accomplished by bribery and corruption; the British government used all its power and patronage to win the votes necessary to pass the measure. Of the majority for the bill only seven, it is said, voted without a personal "consideration." Later the Union was bitterly resented by the Irish people. At the time it was accepted as a political necessity. Britain was engaged in a desperate struggle for existence with France. The enemy had already invaded Ireland three times. The Irish Parliament, which represented not the people but the Protestant minority, was selfish and impracticable, could be managed only by bribery, and made impossible the unity of control which on military grounds seemed vitally important.

Economic conditions in Ireland remained what the past had made them. The economic history of the country after 1800 must be an account of the attempts to remove the evils of those conditions. First came measures reforming some political and social abuses, but leaving untouched the fundamental economic problems. The great famine of 1846 was a turning point. After that came a series of laws aiming to reform the worst features of the land system, the sore spot of Irish life. These laws culminated in land purchase acts, designed to return to the native Irish the ownership of the land on which they lived. The retreat of the British from the position which they had occupied ever since as conquerors they had invaded the island closed when they

granted to the Irish what they had never yet enjoyed, real home rule.

GROWTH OF AGRARIAN DISORDER

The strict laws attending and following the British settlement were designed to reduce the Catholics, the mass of the native Irish, to the position of helpless subjects. They were to remain poor and powerless. With the passage of time, however, agrarian disorders and actual revolts increased in number. From the tribal system of the past the Irish had inherited fighting traditions. Family feuds among them, the Egans against the Caseys, the Flynns against the Walshes, and so on, persisted long after the original occasion of the feud had been forgotten. The "sword-men" of the Irish tribes, professional warriors, had been so far as possible exterminated or exiled in the process of settlement, but many remained as outlaws in robber bands, "wood kerns" or "tories." Veterans of the English armies, settled on land granted to them, were fighters too. Kilkenny, the county of the fabled cats who fought until all were destroyed, became notorious for its disorders. Arthur Young described the barbarities of the Whiteboys in that county. And these roughs are said to have been the descendants of Cromwell's troopers!

Whiteboys in the south, resisting the enclosure of grazing land, Hearts of Steel in the north, fighting against evictions, Oakboys opposing forced labor on roads, were groups with special grievances. Orangemen, Protestants taking their name from William of Orange and celebrating the Battle of the Boyne, were opposed by the Catholic Society of United Irishmen. The government, if it was to maintain itself and keep such peace as would make life possible, must quell the growing conflicts or remove the conditions which led to them.

TITHES

In the early part of the nineteenth century the question of tithes spread disorder over a large part of Ireland. Black Feet and White Feet, fighting the payment of tithes, carried on a reign of terror, marked by assault, arson and murder.

A tithe was nominally a tenth of the product paid by the occupier of land for the support of the church. Two features made

it particularly obnoxious to the Irish people. In the first place the whole proceeds went to the established episcopal church. Some 6 million poor Catholics must not only support their own church but must in addition contribute (as noted in the budgets of cottiers given above) to the support of a church ministering to less than 1 million, in which many of the clergy were absentees, and so rich that it could afford to pay its bishops \$50,000 a year and over. In the second place, the method of imposition and collection was iniquitous. Pasture land was exempt; the rich grazier paid nothing, while the poor cottier paid on his potato patch. The clergy usually farmed out the collection of the tithe to contractors or employed agents, proctors; there were sometimes two or three layers of middlemen, each keeping his slice of the proceeds and pressing his subordinate for more. The tithe proctors, said Arthur Young, were "very civil to gentlemen, but exceedingly cruel to the poor."

Opposition to tithes grew so violent that finally, in 1838, the Westminster Parliament converted them into a charge on the land, at 75% of their nominal value, to be paid henceforth by the landlord, not by the occupier. Relief of the people was more apparent than real. The landlord raised rents to cover his payments, shifting the burden back on the people, relieving the church of the odium attached to collection, but incurring it himself.

EDUCATION; POOR RELIEF

Other measures of this period before the famine affected education and poor relief, but left untouched the fundamental economic problems crying for solution.

In Ireland as in England sectarian conflicts were a grave obstacle to the establishment of an effective system of public education. Protestant rulers were unwilling to grant to Catholics funds for the training of their youth. A Society for the Education of the Poor (1811), committed to the principle of restricting religious instruction to the reading of the Scripture without comment, fostered the development of more than a thousand schools; and a public department of education was at last established in 1831. The work of this department was cramped by sectarian differences; Protestant ministers, testifying before a parliamentary

committee, could assert that it was better a child should not be educated at all than that he should be brought up as a Catholic. The results were apparent in the statistics of illiteracy in a much later period.

Ireland had in different places special arrangements for the relief of destitution, but no general system of public poor relief. The lack of one was felt as the pressure of population increased. A commission reported that half a million people, counting with their families over 2 million souls, were without work for 30 weeks in the year. A few, who could raise the funds, had begun the emigration to America; many sought work in England. Even the English now demanded an Irish poor law to keep pauper labor at home. Accepting the principle, "Property has not only rights but also duties," Parliament established in 1837 a national system of poor relief in Ireland, and imposed the burden of supporting it on landlords and lessees. The propertied classes were to be encouraged under the act to provide work for the unemployed cottiers, but actually found it more profitable to drive them off the land and into the towns.

GROWTH OF POPULATION; LACK OF PRUDENTIAL CHECKS

Meanwhile a rapidly growing population was pressing hard on the means of subsistence. Petty (1672) estimated the Irish population at 1.1 million. Constant tribal conflicts had kept it down, and the ravages and hardships of the period of British settlement prevented any considerable growth up to 1700. The eighteenth century was a period of peace, in which the population multiplied. The census of 1822 counted 6.7 million; an estimate of 1845 put the figure at 8.3 million. A low standard of living was both cause and effect of this astonishing increase. The Devon report of 1845 summarized the evidence regarding the position of the cottiers to show "that in many districts their only food is the potato, their only beverage water, that their cabins are seldom a protection against the weather, that a bed or a blanket is a rare luxury, and that nearly in all, their pig and their manure heap constitute their only property." The census of 1841 showed that in the rural districts 46% of the families lived in a cabin of one "room" (with the pig); that in the towns

one room housed 36% of the families, and sometimes even 2 or 3 families. And the common Irish family was a large one. Young gave statistics of 43 laborers on an estate in County Clare, showing the families to range in number from 3 to 12, with 6 the most usual. Haymakers on an estate in another county occupied 13 cabins with 82 souls; the usual family again numbered 5 or 6.

Catholic priests encouraged early marriage in the interest of morals. A young pair could get some sort of shelter at little expense, and a scrap of land on which to live. Children were not considered a burden; they cost little to feed, and could add a little to the family income. Young said regarding Irish women "for twelve years 19 in 20 of them breed every second year. Vive le pomme de Tere!" [sic].

EARLY FAMINES

So far back as when Dean Swift wrote his grim pamphlet, "A modest proposal for preventing the children of poor people from becoming a burthen," published at Dublin in 1729, the danger of the situation had been apparent. There had then been famine for three years; thousands died and there were beggars everywhere. Swift estimated 200,000 couples of breeders in Ireland, and 120,000 children born to parents of whom most were unable to support their offspring. He proposed that 20,000 of these children be reserved to continue the breed, and the remaining 100,000 at one year old be sold for food. "A child will make two dishes at an entertainment for friends, and when the family dines alone, the fore or hind quarter will make a reasonable dish, and seasoned with a little pepper or salt will be very good boiled on the fourth day, especially in winter."

The Irish in the nineteenth century were living on a standard even lower than that which had prevailed before, and desperately near to the brink of disaster. They were growing potatoes of an inferior quality, soft and watery but larger, "lumpers" or "horse potatoes." Many had to do without milk, which had been a saving feature of their previous diet. Partial crop failures were storm signals apparent to thoughtful observers, who warned the government and the people. Wet seasons in 1816 and 1817 forced people to seek to live on potato tops and stalks, on mustard seed and nettles; many died of hunger-typhus and the government

carried on public works to relieve the distress. Crop failures, partial or local, reappeared every few years.

THE GREAT FAMINE, 1846

A partial failure of the potato crop in 1845 was followed in the next year by one almost general and complete. Tubers dug from the ground would turn overnight into a stinking mass. The blight was widespread; Thoreau observed it in the Maine woods. The crop was good in 1847, but only a fraction of the usual amount of land had been planted.

The government, according to English practice, required an annual return of deaths ascribed to starvation. Even before 1845 the figure ranged about 100. In 1845 it was over 500; 1846, 2,000; 1847, 6,000. Typhus fever, of which the infection is carried by the louse, was endemic in Ireland before the famine, as it must be among a people living as the Irish did. It accounted every year for some 7,000 deaths. Now it took the form of hunger-typhus, attacking persons weakened by privation. In 1846 and the following years the figure rose, in thousands, to 17, 57, 46, 39. A similar rise was to be noted in deaths from dysentery. These figures, be it noted, are minima. In the few years between 1845 and 1853 the population is estimated to have declined by more than 2 million. The number emigrating to America is known to have been less than 1.5 million. There is left to be accounted for over half a million souls. Even if emigration to England (for which there are no statistics) amounted to a considerable fraction of this figure there remain hundreds of thousands to be accounted for as victims of starvation and disease. One modern writer (Martens) says downright that 600,000 died of hunger-typhus. Descriptions of conditions by contemporary observers are pitiful in the extreme.

The government sought to meet the situation, first by wage payments under an elaborate system of public works, then more effectively under the Soup Kitchen Act by the distribution of direct relief in the form of cooked rations. Yet it would not, for many months, repeal navigation laws which hindered the importation of food; and at the height of the famine Ireland was exporting grain to pay its debts to England. The landlord class did little to relieve the situation. They refused to assist in the

administration of relief, and were strict in demanding payment of rent. In the three years 1847-49 there were 35,000 ejectment decrees, and more than that number of evictions. An amendment to the poor law in 1847 denied poor relief to anyone holding over one-quarter acre of land; he must live on that, die, or get out.

RESULTS OF THE FAMINE

As an excuse for the attitude of the landlords of the period it should be said that as a result of improvidence and extravagance many of them were in no condition to assist. "Their condition generally is deplorable," the viceroy reported to Peel in 1849. "As a body they are insolvent. Many of them lack the first necessities of life, and though exercising the rights of property they can perform none of its duties." Their estates were generally entailed and encumbered with family settlements to such an extent that their hands were hopelessly tied. An act of 1849 sought to cut their bonds, but did so to the advantage of the creditors who held the mortgages, and with no regard to the tenants who cultivated the land. More than one-eighth of the land changed hands within a few years after the famine. The new proprietors were "bourgeois," seeking only to make the most out of their investments, and finding the best profit in a consolidation of small holdings into farms of 200 acres and over, to be used for grazing stock and the production of meat. In the years 1849-56 official statistics reported 52,000 evictions affecting 259,000 persons; the actual number was larger. Students of Irish history are agreed that the savage hatred of England which marked the Irish of a later period was rooted in the events of this time. The leaders of a rebellion of "Young Ireland" in 1848 fled the country when it was suppressed, and started the organization of a secret society to free Ireland from English rule. The Fenians were a part of this movement, getting their training later in the American Civil War, but failing in the revolution which they had planned.

Even before the famine, conditions had stimulated an emigration which deprived the country of its best stock. "The young, the strong, the enterprising and the industrious individuals of families leave us," said the Devon Report of 1845, "whilst the

old, the impotent, the idle and indolent portions stay with us." The famine turned a trickle into a flood. The number of emigrants, 1851-1914, was 4.4 million. Ireland, which in 1841 had a population of 8.2 million, counted in 1911 only 4.4.

• PERIODS IN REFORM LEGISLATION

Conditions after the famine forced gradually on the British Parliament conviction that it must change its policy, and even reverse it. Three periods can be distinguished. To about 1870 legislation followed the old lines, based on the idea of absolute ownership of the landlord. The period 1870-85 was one of transition, marked by the attempt to recognize the tenant's interest yet retain the landlord's rights. After 1885 the aim was to convert the tenant into a proprietor, to return the land of Ireland to the Irish.

Mill said that England ruled India by leaving it to men who lived there, who knew the difference between India and England, and who made Indian interests their occupation; while Parliament ruled Ireland without realizing the difference between Ireland and England, treating the question of landlord and tenant as though it were English. Legislation in the period first following the famine still made the landlord's interest the dominant consideration. It expressed the principle formulated by an Irish clergyman in 1827: "To regulate the management of private property is not the province of a wise government."

About 1870 nearly half of the land of Ireland was still owned by absentee proprietors; more than three-quarters of the holdings were tenancies at will. Gladstone's act of 1870 opened a new era. It assured a tenant compensation for improvements which he had made, and offered compensation for arbitrary eviction. It realized, therefore, one of the 3 F's, Free Sale. But it could easily be evaded by a greedy landlord, and gave no satisfaction to a tenant who wanted land, not money. And it was already behind the demands of the Irish, who were gaining rapidly in independence of spirit and in efficiency of organization.

THE LAND ACT OF 1881

Gladstone's act of 1881 went further. A Belgian author has said that it made greater breaches in the principles of private

property and freedom of contract than did the French Revolution, even the Terror. In practical effect it established by law the three F's. Tenancies at will were to be converted into tenures for terms of 15 years, renewable practically forever; this gave Fixity. Fair rent was to be guaranteed (this was the revolutionary feature) by judicial process which could set aside the contract of landlord and tenant, and could decide what could "fairly" be paid under the conditions. Under this act the courts reduced rents some 20% over the larger part of Ireland, and under similar acts later effected still further reductions.

Regarded with bitter hostility by the landlords, the concession came too late to satisfy the Irish tenants. The Land League, formed earlier, binding its members not to take a farm from which the tenant had been evicted for failure to pay an increased rent, marked the spread of an agrarian opposition attended by threats and violence. The boycott, an Irish invention of the period, applying social and economic ostracism to an enemy, was but one of many weapons employed. The agitation for home rule, culminating in Gladstone's measures of 1886 and 1893, both killed in Parliament, intensified national feeling and the demand for economic independence.

LAND PURCHASE ACTS

At long last the British were convinced that the only solution of the Irish problem was to restore to the native Irish the land which had been taken from them in the processes of settlement and confiscation. The evils of alien land ownership had long been apparent to thoughtful observers. British rulers could no longer close the eyes to them. The bitter opposition and obstruction of Irish representatives lamed the Westminster Parliament, and threatened the unity of the United Kingdom. Ever since the famine the question of government action to restore to the Irish the ownership of their land had been discussed. Both of the ruling parties at Westminster found it politic to accept the principle of restoration, and a series of laws had succeeded, by 1903, in effecting the transfer of 2.5 million acres. The provisions of these laws were highly complicated. Their action can be illustrated by describing the law of 1903, under which in the decade following an additional 4.6 million acres were transferred.

LAND PURCHASE ACT OF 1903

This measure, like the preceding, proposed to effect the transfer by voluntary agreement between landlord and tenant. The amount of rent which the tenant could fairly pay on his holding had already been pretty well determined by court action, setting judicial rents. The state proposed to buy the landlord out, paying him in cash a sum which could be invested elsewhere to return an income equal to the former rent. That put the landlord out of the picture, substituting the treasury in his place. The state would raise the necessary funds by the sale of bonds, on which it need pay only a low rate of interest, because of the public credit it enjoyed. If now the state collected from the former tenant an amount equal to (actually less than) the rent formerly paid, the state would have not only means to pay interest on the bonds but a surplus which could be used to retire them. In the course of years the tenant, without extra exertion, would become full proprietor.

In figures the state raised its funds by the issue of $2\frac{3}{4}\%$ bonds, and required the purchaser to pay $2\frac{3}{4}\%$ (later 3%) plus $\frac{1}{2}\%$ for amortization, which would wipe out the debt in $68\frac{1}{2}$ years. The new proprietor would meanwhile pay in interest considerably less than his former rent. The treasury could in theory have come out even on the transaction. In fact it had to assume some burdens. It bore the loss of the issue of bonds below par, and of failures of former tenants to pay. Further, to induce sales it had to pay a bonus to some landlords whose estates were encumbered with various family claims. Even so it might hope to profit by the transaction. It was at the time paying out large sums every year to repress disorder in Ireland, and could expect to reduce these expenditures if the Irish were contented.

AGRICULTURAL IMPROVEMENT

After this survey of the course of policy we must return to a study of fact. In 1911, just before the first World War, Ireland was still a country of small agricultural undertakings. A third of the land holdings were below 10 acres, a half below 20; half of the families lived on holdings returning only \$50 a year or less. Yet, as will appear, conditions of life had greatly improved even

on these small holdings; and even in this class there was a tendency toward an increase in the size of the holding. Emigration, by reducing the pressure of population, had made this possible, and further had permitted great areas to be taken from under the plow or spade and turned to grass. The largest and best part of Ireland became after the famine what it had been a century before, pasture land devoted to animal products. Arable agriculture, where it persisted, showed a marked increase in the yield. Better systems of cropping became more general, and fertilizers were applied in much larger quantities.

RISE IN THE STANDARD OF LIVING

Just before the first World War the rate of emigration had dropped to about that of the English. Characteristic budgets of the Irish rural family were still modest in the standard which they portrayed, but were far removed above the cottiers' budgets given by Arthur Young. The poorer class in western Ireland, who had lived altogether on corn-meal porridge and potatoes, are said after the application of land purchase to have enjoyed bread and milk, eggs and tea, sometimes some bacon.

The most striking index of the rise in the standard of living is furnished by statistics of housing. In 1841 more than three-quarters of the families lived in mud cabins, of which nearly half had but a single room. In contrast, in 1911, two-thirds lived in real houses, with five rooms or more, and of the remainder only a small fraction (some 5,000 in all) lived in one-room cabins. The government was active in furthering this improvement. It built for agricultural laborers cottages with three bedrooms and a kitchen, and for the rent of the cottage and an acre of land asked only \$0.12 to \$0.50 a week, making the taxpayer contribute the inevitable deficit.

COOPERATION; THE I.A.O.S.

In the improvement of economic conditions cooperation played a part. An experiment in cooperation, inspired by Robert Owen and started as far back as 1831, had had but a short life. A general cooperative movement began about 1890 and was largely due to the devotion and enthusiasm of a single individual, Horace Plunkett, son of Lord Dunsany. Plunkett believed that the Celtic

tribal feeling would help the people to work in groups where they had failed as individuals. He thought that the political agitation, the impulse to trouble-making, had blinded the people to things which they could do for themselves. His principle was, "the less politics there is in business, and the more business in politics, the better for both"; he told the people to "disinfect their politics with common sense." Under his influence the I.A.O.S. (Irish Agricultural Organization Society) was founded, and for a time the cooperative principle spread rapidly.

The best field for its application was in the dairy industry. Irish farmers had been used to fill tubs gradually with layers of butter, all varying in texture and flavor and color. The butter had the reputation of being the worst on the market; an Irishman said it was good only for the adulteration of margarine. Not only was the quality poor; the yield was low as no effort was made to test and select the cows; and the supply fell off sharply from October to April as grass-feeding was practically universal. Butter was imported in large quantities from Denmark, and sold in a country perfectly adapted to its production. Obviously these conditions offered a great opportunity to a society which would organize cooperative creameries, provide scientific knowledge and technical instruction, grade and standardize the product, and supervise the marketing.

EXTENSION OF COOPERATION

The cooperative creameries extended their activities to the purchase of supplies, to the provision of loans, and to improvement of the poultry industry. The Irish women had paid no attention to the breed and feeding of hens, had made little attempt to clean and sort the eggs, and had bartered the product with itinerant collectors. An illustration is given of an egg-collector in County Galway who would start out with a wagon half full of straw, when the price in the market was 10 to 11*d.* per dozen, would pay 6*d.* but in tea, sugar, etc., at double the store price, so that he gained 4*d.* on the purchase, 3*d.* on the sale, a total of 7*d.* Special egg and poultry societies, of which there were 11 in 1915, had 4,000 members and a yearly turnover of £85,000. Special societies were formed also to buy agricultural supplies, and to further the flax industry.

In Irish rural life there was particular need of good credit facilities. The usual money-lender was the gombeen-man, the village shopkeeper. An illustration is given of one in a district of small holdings in western Ireland. He had outstanding 500 loans of £1 19s. 11d., just under £2 or \$10, so that he could get summary decrees of execution from the local court. One hundred and two decrees were ready for execution at the time. He said that he charged $43\frac{1}{3}\%$, but as the debtors were bound to treat to drink at his shop and make their purchases there the actual rate was much higher. Cooperative credit societies were founded, particularly under the influence of "AE," George W. Russell, well known in literature, and they accomplished considerable good. They did not succeed in establishing such habits of thrift as would make them, like their German models, virtually independent. When the government reduced the financial aid which it had extended to them they lost their business to branches of joint stock banks.

The Irish, despite many admirable personal characteristics, seemed to lack some of a humdrum kind, sober and practical, in which cooperation could take firm root. Personal differences and political differences hampered effective administration. The devoted band of enthusiasts who had started the movement accomplished much good, without question; cooperation persisted through the first World War and after it. Such transformation of native economy, however, as developed in Scandinavia, was not accomplished.

HINDRANCES TO INDUSTRIAL DEVELOPMENT

Tied to its past, Ireland remained still a backward country as it entered the twentieth century. Critics called attention to the unduly high proportion of people occupied in trade or in other activities not leading to the production of material goods, and charged the Irish with the attempt to live "by taking in each other's washing." More than a third of the population of Dublin was composed of hawkers, laborers, porters, paupers and their families, "a viscid pool of unskilled workers, casual workers, and non-workers." Agriculture employed the largest fraction of the people, and furnished the largest part of the exports. In commerce Ireland still occupied the position of a British colony, ship-

ping to Britain four-fifths of goods sent out, getting from the sister island two-thirds of the goods brought in.

Various reasons have been assigned for the failure to develop an extensive manufacturing industry. Before 1824, when the British market was opened to the free import of Irish goods, British commercial policy was a deterrent, and after the free trade movement following 1846 Ireland had to meet the competition of other countries in that market. Coal of good quality and large quantity is lacking in Ireland. Nevertheless some strong industries did develop, particularly in Ulster. Even in the south the success of the Ford plant at Cork showed that the native Irish could make as good factory workers as they had proved to be in the United States if they were efficiently led, and supplied with ample capital. The chief hindrance retarding the development of manufacture appears to have been the reluctance of capitalists to invest their money in a country in which mistaken land laws had made economic and political foundations unsure.

MANUFACTURES

Belfast, in northern Ireland, had been a mere village until a linen market, established there in 1746, made it a center for an industry which grew up in the surrounding country. Flax fibers have a kind of gum which enables them to be spun into strong strands if the fibers can be made to slip over each other as they are twisted and pulled. Hand spinners could accomplish this but machines could not, and if the gum were dissolved to fit the fiber for their operation it merely "turned good flax into bad cotton." In 1825 James Kay of Preston discovered that fibers soaked for six hours in cold water were made slippery enough to be machine-spun into fine yarn, and the industry rapidly developed on a factory basis, both in spinning and weaving. Linen goods were the leading export of Ireland before the first World War, outranking even such agricultural products as cattle, bacon, butter, poultry and eggs, which followed in that order.

The next export, sixth in rank (1912-14), may surprise the reader; it was ships. Harland & Wolf established a shipyard at Belfast in 1862; they had a good site, near to the great English ports, and an abundant supply of male laborers, whose women-folk could get employment in the linen mills. They saw the

possibilities of iron (later steel) ships in a period in which there was an active demand for larger carriers, powered by steam. Importing practically all their coal and raw materials, they yet were able by superior leadership to develop a business employing 25,000 men, supplying ocean liners to the White Star, the Royal Mail and many other companies. For thirteen different years in the period 1891-1912 they held first place in the world, in output of tonnage.

HOME RULE

While economic conditions improved, political tension increased with the growth of Irish national feeling. British concessions, culminating in the land purchase acts, came too late to appease the Irish, who were now determined to win their independence. Shortly after 1900 a movement started labelled "Sinn Fein," Gaelic words which can be translated as "We Ourselves" or "Ourselves Alone." It aimed not only to force the recognition of an independent Irish parliament, but even to break the economic bonds which had held the two islands together, and make Ireland economically self-sufficient. Just before the first World War the tension seemed to have reached the breaking point; Ulster threatened armed rebellion against an act of the British Liberal government which would have made it subject to a national Irish parliament. Although the act was passed its operation was suspended, and an attempt at a revolution by the Irish, Easter, 1916, was repressed.

George Bernard Shaw, an Irish Protestant, was impatient at a situation in which economic interests were to be sacrificed to political passions. England, he said, should bring the separatists to their senses by threatening them with independence! Ireland should make war to retain the Union! "How Irish on the part of the English! How English on the part of the Irish!"

The solution finally attained, in 1921, was the division of Ireland into two parts. The northern portion, largely British and Protestant, was to remain a part of the United Kingdom, governed by the Westminster Parliament, to which it sent representatives. The remainder of the island was given the status of a self-governing dominion, such as Canada or South Africa, with limitations on its independence which were scarcely more than

nominal. Among the many difficult questions left open by this arrangement was the settlement of payments for the land purchases which had turned Irish tenants into proprietors. Britain had advanced the money for these purchases. The government of Eire, the native name adopted for independent Ireland, refused to collect and remit the funds needed to wipe out the debt. Britain imposed heavy punitive duties on Irish agricultural exports, which burdened the Irish producer at the very time when he was taxed at home by protective duties designed to stimulate native Irish manufactures.

Finally (Apr. 25, 1938) the two governments came to an agreement by which Britain accepted a lump sum of £10 million in satisfaction of its claims, ceded to Eire the three naval ports which for strategic reasons it had retained in its possession, and made with Eire a trade pact on the Ottawa model.

QUESTIONS

Justify the Union of 1800. Block out the later history of Ireland.

Illustrate the growth of agrarian disorders.

Explain the opposition to tithes and the results.

What improvement was effected in education and poor relief, and how was it restricted?

Explain the rapid growth of population.

Give reasons why a serious famine was to be anticipated.

Indicate extent of famine and pestilence, 1845-46. Criticize relief measures.

What were the effects of the famine on land tenure and on emigration?

Block out periods in reform legislation.

What were the main features of the land acts of 1870 and 1881?

Explain how the government was forced to the land purchase acts.

Explain the working of a land purchase act.

Illustrate agricultural improvement since the famine.

Illustrate the rise in the standard of living.

Sketch the development of cooperation.

Illustrate the results in the dairy and poultry industries; in credit.

Explain the persistent backwardness of manufacture; and exceptions in Ulster.

Sketch the development of nationalist feeling after 1900.

What was the outcome?

READING

George O'Brien, *The Economic History of Ireland from the Union to the Famine* (London, 1921), covers the first half of the century. For the more recent period periodicals offer abundant material. A volume entitled *Ireland, Industrial and Agricultural*, published by the Department of Agriculture and Technical Instruction for Ireland, Dublin, 1902, gives a good description, with history to date. On cooperation, L. Smith-Gordon and L. C. Staples, *Rural Reconstruction in Ireland* (London, 1919), is excellent.

Agriculture and people. (O'Brien, pp. 9-41.)

Subdivision and consolidation of holdings. (O'Brien, pp. 42-86.)

Causes of agricultural distress. (O'Brien, pp. 87-128.)

Attempts to increase production. (O'Brien, pp. 129-156.)

Attempts to decrease population. (O'Brien, pp. 157-221.)

The great famine. (O'Brien, pp. 222-282.)

Manufacture, 1800-45. (O'Brien, pp. 297-377.)

Causes of industrial depression. (O'Brien, pp. 378-447.)

Survey of the Irish problem after 1845. (Slater, chap. 19, pp. 228-238.)

The Irish linen industry. (Ashley, pp. 120-150.)

Land purchase act of 1903. (Bastable in *Quarterly Journal of Economics*, Nov., 1903, 18:1-21; or *Economic Journal*, 1903, 13:169-176, *ib.*, 1905, 15:521 ff.)

Agricultural cooperation. (Finlay in *Economic Journal*, 1896, 6:204-211; McCabe in *Quarterly Journal of Economics*, 1905-06, 20:547-574.)

References

References below do not aim to present either a bibliography of the topics treated or a complete documentation of the statements in the text. I have omitted many references to standard authorities and have cited sources only when I thought a scholar might like to know just which ones I followed, and where the reference will be found. If the selection on occasion seems arbitrary, as doubtless it will, it may be of some use as a check, and as an indication of further sources of information. Only initial words of titles are capitalized, and titles and specifications are often abbreviated (L. for London, P. for Paris, etc.); full citations are not repeated if given in Readings in text above.

CHAPTER I. MEDIEVAL AGRARIAN

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TENURE: Neilson in Amer. Hist. Rev. (1897), 2:217; F. M. Page, Crowland Abbey (N. Y., 1934), 116. *Open field*: map from Gilbert Slater, English peasantry (L., 1907), 9. Text follows G. F. Knapp, Grundherrschaft (Leipzig, 1897), 107 ff., rather than Vinogradoff and Kowalewsky. Advantages alleged in E. Gonner, Common land (L., 1912), 34; Orwin, in Econ. Hist. Rev. (1938), 8:133; for criticism see A. Ruston and D. Witney, Hooton Pagnell (N. Y., 1934), 82, 113 ff.; and see below, Russia.

FIELD SYSTEMS: K. von Inama-Sternegg, Deutsche Wirtschaftsgesch. (Leipzig, 1879), 1:399 ff.; H. L. Gray, English field systems (Cambridge, Mass., 1915), 70 ff. *Rothamstead*: Ency. Brit., 14th ed., 19:57. *Yield*: M. K. Bennett, in Econ. Journ., Supp't, Econ. Hist. (Feb., 1935), 3:28; Maitland, Domesday book (Cambridge, 1897), 438. *Implementments*: Fitzherbert, Husbandry, ed. Skeat (L., 1882), 9 ff.; Eliz. Lamond, ed., Walter of Henley's Husbandry (L., 1890), 11, 69.

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Witney, 4, plate x. *Standard*: quotation (from Pierce the Ploughman's Crede) borrowed from H. Bennett, *Life*, 185; Archdeacon Henry of Huntingdon in Coulton, *Soc. life*, 2. *Famines*: F. Curschmann, *Hungersnöte in Mittelalter* (Leipzig, 1900), 39, 82 ff., 128 ff.; H. Robbins in *Jour. Pol. Econ.* (Aug., 1928), 36:453, 459. *Character*: Fritz Meyer, *Die Stände* (Marburg, 1892), 9; Kötzschke, 48 ff.; F. M. Page, *Crowland*, 139 ff.; A. Jessopp, *Coming of the friars* (L., 1889), 233, 241, 243. See Coroners Rolls, 1263-1413, in Selden Soc., vol. 9.

VARIETY: Kosminsky in *Econ. Hist. Rev.* (1931), 3:38; Power, *ibid.* (Nov., 1937), 8:83; Brodnitz, 157, 175; Page, 18, 22, 70; Bloch in *Ann. Hist. Econ. et Soc.* (Mar., 1938), 10:147-151, and details in his *Caractères originaux de l'histoire rurale française* (Oslo, 1931); Lamprecht, 37 ff., 71.

CHAPTER II. MEDIEVAL MUNICIPAL

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GILDS: *Merchant*: for England, Gross; Shrewsbury, W. Cunningham, *Growth of English industry* (Cambridge, 1896), 1:645; continental, A. Doren, *Kaufmannsgilden* (Leipzig, 1893), 161 ff.; H. Pirenne, *Medieval cities* (Princeton, 1925), 125. *Craft*: Schmoller, *Strassb. . . Zunft*, 376, 384 ff.; G. von Below in *Hist. Zeitschrift*, 1912, 109:33, 42, 46. *Appreciation*: Schmoller, 532, and in his *Jahrbuch* (1890), 14:1046; Sombart, 1:127; G. Schönberg, in *Jahrb. f. Nationalökonomie* (1867), 9:8, 158.

POLICY: *Trade*: Eli F. Heckscher, *Mercantilism* (L., 1935), 1:128, 2:58, 100; quotation from his article in *Econ. Hist. Rev.* (1936), 7:46; and cf. Schmoller and Below. *Industry*: Coventry, L. Salzmann, *English industries of the Middle Ages* (L., 1913), 219. *Criticism*: besides above, E. Kelter in Schmoller's *Jahrbuch* (1932), 56:749-775; cf. *ibid.* (1935).

59:299-309, 311 ff. London example from Mrs. J. R. Green, *Town Life* (N. Y., 1894), 2:90.

CHAPTER III. DEVELOPMENT OF MANOR AND OF TOWN

GENERAL: N. Gras, *English corn market* (Cambridge, Mass., 1915), 14; Gross, 1:8, 30; Cheyney in *Eng. Hist. Rev.* (1900), 15:28 ff.; T. W. Page, *End of villainage*, *Am. Econ. Ass.* (1900), 95. *Colonial*: Köttschke, *Deutsche Wirt.*, 107 ff. *Black Death etc.*: H. Robbins in *Jour. Pol. Econ.* (Aug., 1928), 36:447-479; F. Page, *Crowland*, 121, 145 ff.; example from Jessopp, 203; Langland and ord. of 1349 quotations borrowed from Traill, *Social England* (L., 1894), 2:142. *Commutation*: German comparison from Roscher, *System*, 1:104; quotation from Vinogradoff, *Villainage*, 181; M. Postan in *Trans. Roy. Hist. Soc.* (1937), 40:169 ff.; H. Gray in *Eng. Hist. Rev.* (Oct., 1914), 29:625-656. Norwich example, R. Tawney, *Agrarian problem* (L., 1912), 42. France: Bloch in *Ann. Hist. Econ. et Soc.* (March, 1938), 10:149; P. Darmstädter in *Zeitschr. f. Soc. . . . geschichte* (1896), 4:347 ff. *Germany*: Köttschke, *Deutsche Wirt.*, 104; R. Schröder, *D. Rechtsgesch.* (Leipzig, 1894), 447.

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CHAPTER VI. ENGLAND, 1500-1700

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Disraeli, *Sybil*, Book 1, chap. 3, R. H. Tawney, *Agrarian problem in the sixteenth century* (L., 1912), 316; J. Massie, *Calculations of taxes* (L., 1756), No. 30.

CHAPTER VIII. THE INDUSTRIAL REVOLUTION IN ENGLAND

I see no reason to abandon the term "Industrial Revolution" for the changes which transformed the world, or to refuse to date it from the inventions of Arkwright and Watt. There is not space to discuss Miss Gilboy's thesis (*Facts and factors in econ. hist.*, Cambridge, Mass., 1932, 620 ff.) that the revolution started in England because of the peculiar advantages offered by the national market. It seems to me an exaggeration of one possible factor. A market, certainly, was necessary to absorb the product of the developing manufacture, and an expansion of trade, both at home and abroad, was one aspect of the revolution; that it was the active factor, rather than the resultant of other factors, remains to be proved.

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THEORIES: Edmund Burke, *Thoughts . . . on scarcity*, Nov., 1795 (L., 1800), 32; C. J. Fox, *Substance of the speech . . .* Nov. 1. 1783 (L., 1783), 3; Cunningham, *Growth*, 2:789; Hammond, 178; Joseph Townsend, *Dissertation on the poor laws* (1786) (L., 1817), 39; on the other side, James Maitland (Lauderdale), *Inquiry* (Edinb., 1804), 324, 345. Thomas Chalmers, *Christian and civic economy* (Glasgow, 1821-26), 3:viii, 112, and the Ricardian socialists. *Jour. Roy. Stat. Soc.* (1845), 8:351; N. W. Senior, *Industrial efficiency* (N. Y., 1928), 1:322. quoting Chadwick.

HAND TRADES: John James, *History of worsted manufacture* (L., 1857), 329, 481; Kenyon in *Econ. Rev.* (1910), 20 164; Symons, 149; Charles Knight, *Knowledge is power* (L., 1859), 107; S. and B. Webb in Braun's *Archiv* (1897), 10:108; Wallas, *Place*, 14, 164.

FACTORY: A. Redford, *Labour migration*, 19 ff.; S. and B. Webb, *History of trade unionism* (L., 1902), 74; B. L. Hutchins and A. Harrison, *History of factory legislation* (Westminster, 1903), 30, 91; James, 441. For hours in handicraft see *General description of all trades* (L., 1747); for other countries Symons, and Baines, 480. *Wages:* Symons, 84; G. M. Trevelyan, John Bright (L., 1913), 74, Disraeli, *Sybil*. *Children:* O. J. Dunlop, *English apprenticeship* (L., 1912); Peel, 1:259; Hutchins, 45; W. C. Taylor, *Notes of a tour*, 231. *Criticism:* John Stuart Mill, *Political economy*, Book 4, chap. 6, sec. 2; Hammond, *Town labourer*, 160; Frank Podmore, Robert Owen (N. Y., 1907), 1:339; *Sybil*, Book 3, chap. 5. *Towns:* Report of 1840, *passim* [and cf. description of Coketown in Dickens' *Hard Times*]; W. E. Hearn, *Plutology* (1864), 61.

LABOR: In general, the Webbs, Hutchins and Harrison, Wallas, 198; Hammond, *Town labourer*, 257; G. I. H. Lloyd, *Cutlery trades* (L., 1913), 251; Peel, 1:260 ff.

AGRICULTURE: J. S. Nicholson, *History of the English corn laws* (L., 1904); table from G. C. Broderick, *English land* (L., 1871), 187, cf. 163; Lewis Mumford, *Story of utopias* (1922), 201 ff.; H. S. Furniss, *Industrial outlook* (L., 1917), 214, 229; B. S. Rowntree and M. Kendall, *How the labourer lives* (L., 1913), 22 ff., 50, 54, 82; F. Verinder in Galton, *Workers on their industries* (L., 1896), 164.

AGRICULTURAL CRISIS: Periodical references in Reading above, statistics from R. H. Inglis Palgrave, in *Jour. Roy. Stat. Soc.* (March, 1905), 68:50-80, Charles Adeane and E. Savill, *The land retort* (L., 1914), 89; *London Times* (Dec. 17, 1913), 8.

CHAPTER X. ENGLISH TRADE AND MANUFACTURE, 1873-1914

COMMERCE: See my *History of commerce* (N. Y., 1938), for a more extended treatment. The chart was prepared for me from the official sources by H. H. Edmiston. A. L. Bowley, *England's foreign trade* (L., 1893), 39; David Macpherson, *Annals of commerce* (L., 1805), 4:503-504; C. J. Fuchs, *Handelspolitik Englands* (Leipzig, 1893), 109. Statistics of balance from *Bd. of Trade Jour.*, Jan. 29, 1925, 114; 145.

EXPORT TRADE: John H. Schooling, *British trade book* (L., 1911); W. J. Ashley, *Tariff problem* (L., 1903), 53 ff., 100 ff.; F. X. von Neumann-Spallart, *Uebersichten* (Berlin, 1896), 751; *International statistical year-book* (Geneva, 1927), 129; *Econ. Jour.*, 29:460; U. S. Consular report, Aug. 19, 1903; table of occupations based on Memorandum on British and foreign trade, 1903 [Cd. 1761], table xxiv.

COTTON: In general, Sydney J. Chapman, *Lancashire cotton industry* (Manchester, 1904); Gerhart von Schulze-Gävernitz, *Cotton trade* (L., 1895); M. T. Copeland, *Cotton manufacturing* (Cambridge, Mass., 1912); *Survey of textile industries*, Part 3 of (Balfour) Committee on industry and trade (L., 1928). Details from L. C. A. Knowles, *Industrial revolutions* (L., 1924), 27, note; F. W. Taussig, *Some aspects of the tariff question* (Cambridge, Mass., 1915), 271, 283; Report of U. S. Tariff Board, *Cotton manufactures* (Wash., 1912), 1:11; Report of (Chamberlain) Tariff Commission (L., 1905), Vol. 2, par. 88, 213.

ASIATIC COMPETITION: Sydney J. Chapman, *Work and wages* (L., 1904), 1:147, and various review articles, *National* (1891), 17:1-11; *Fortnightly* (1895), 64:604-620; (1897), 68:732-749. On Japan, U. S. Tariff Commission, *Japanese cotton industry* (1921), 100; British Department of Overseas Trade, *Cotton industry in Japan* (1927), 56-57; cf. Taussig, *Labor costs*, in *Quart. Jour. of Econ.* (Nov., 1924), 39:112-113.

LABOR: In general, books by S. and B. Webb, and Arthur Shadwell, *Industrial efficiency* (L., 1906); Chapman, *Cotton industry*, 250 ff.; Schulze-Gävernitz, 49, 130 ff.; T. M. Young, *American cotton industry* (N. Y., 1903), 12, 29; T. W. Uttley, *Cotton spinning . . . in U. S.* (Manchester, 1905), 16, 68; Report of Moseley Industrial Commission to U. S. (Manchester, 1903), 145; U. S. Consular reports (Jan. 27, 1904. Nov. 29, 1904).

WOOLEN INDUSTRIES: In general, John H. Clapham, *Woolen and worsted industries* (L., 1907); W. A. G. Clark, *Manufacture of woollens*, Bureau of Manufactures, Wash., 1908; *Survey of textile industries* (with full statistical material). Details from Report of Tariff Board on Wool (Wash., 1912), 1:16; Taussig in *Amer. Econ. Rev.* (1912), 2:267, and in *Quart. Jour. of Econ.*, 8:34; quotation on labor from Report of (Chamberlain) Tariff Commission, Vol. 2, Part 2, par. 1491, cf. 1493, and cf. James, *Worsted*, 531.

IRON AND STEEL: In general, J. S. Jeans, *Iron trade of Great Britain* (L., 1906); British Iron Trade Assoc., *Report on American industrial conditions*, ed. Jeans (L., 1902); Report of (Chamberlain) Tariff Comm., Vol. 1, 1904; and espec. *Survey of industries*, Vol. 4, 1928. Details from *Handwörterbuch der Staatswissenschaften*, second ed., :466, 475; Chapman, *Work and wages*, 1:23 ff. On methods in comparison with American add Mrs. Hugh Bell, *At the works* (L., 1907); Frank Popplewell, *Iron . . . production in America* (Manchester, 1906); *American engineering competition* (N. Y., 1901), 42, 46; Moseley *Indust. Comm.*, 41; speech of Westinghouse in London, Jan. 9, 1903, in *Lit. Digest* (Feb. 14, 1903); Taussig, *Labor costs*, 103 ff. A number of articles on the subject appeared in periodicals about 1900, and the reports of Albert Halstead, U. S. consul at Birmingham, contain much of interest.

MACHINE TRADES: In general, *Survey of industries*, Vol. 4, and Report of (Chamberlain) Tariff Comm., Vol. 4, 1909; B. C. Browne, *Our American competitors*, *Natl. Rev.* (1899), 33:568-580. *Small Industries:* I. F. Grant, in *Econ. Jour.* (Dec., 1922), 32:489-505; A. L. Rowley, in *Economica* (May, 1921), 2:113-115; A. W. Flux in *Jour. Roy. Stat. Soc.* (May, 1913), 76:566. *Cutlery:* G. I. H. Lloyd, *Cutlery trades* (L., 1913); Shadwell, 1:130, 216. *Guns:* "Artifex," *Causes of decay of a British industry* (L., 1907). *Files, etc.:* Shadwell, 1:148, :333; reports of Halstead (Jan. 12 and Jan. 25, 1909).

ORGANIZATION: Quotations of Board of Trade from *Survey of industries*, 4:146, 149. *Engines:* Dwight T. Farnham, *America vs. Europe* (N. Y., 1921), 104; W. C. Redfield, *New industrial day* (N. Y., 1913), 108; *American Machinist* (April, 1903), 26:470; Smiles, *Boulton and Watt*, 174. *Plant:* Moseley *Ind. Comm.*, passim; Shadwell, 1:133, :61, A. F. Livversedge, *Commercial engineering* (Manchester, 1912), 37; W. H. Dawson in *Fortnightly Rev.* (1914), 102:759.

TRADE UNIONS: Edwin A. Pratt, *Trade unionism* (L., 1904); Report of (Chamberlain) Tariff Comm., Vol. 4 (passim, see index); *American engineering competition*, 128 ff.; Chapman, *Work and wages*, :36 ff.; C. Edwards in *Contemporary Rev.* (1902), 81:113-128 [a defense].

CHAPTER XI. ENGLISH MANUFACTURE, 1918-1939

GENERAL: Quotations from Survey of industries, vol. 1, Factors in industrial and commercial efficiency (1927), 65, Final report (1929), 5:235; André Siegfried, England's crisis (L., 1931), 55, 75. *Statistics*: Statistical abstract, 82:372, Bd. of Trade Jour., 142:140, figures for 1937-38 transformed to 1930 base. Report of Liberal Industrial Inquiry [cited henceforth as Liberal report], Britain's industrial future (L., 1928), 9, 54; Survey, 5:8; (Balfour) Comm. on Industry and Trade, Survey of overseas markets [cited henceforth as Survey of markets] (1925), 4, 638. I have covered general aspects of postwar commerce in War shocks to European commerce, Foreign Affairs (July, 1927), 5:633-649. *Conditions*: Survey, 5:3, 246; Survey of markets, 13 ff., 638, 640, 670; W. F. Lloyd and B. Austin, Capital for labor (N. Y., 1927), 20.

COMPARISONS: Loveday, 154, 161, 164; Flux in Quart. Jour. Econ. (Nov., 1933), 48:1-38; cf. Bowden in Jour. Pol. Econ. (1937), 45:347-369.

MANAGEMENT: Farnham, 256; C. S. Myers, Industrial psychology (N. Y., 1925), 35; S. S. Hammersley, Industrial leadership (L., 1925), 87; Lloyd and Austin, 34 ff.; Siegfried, 65; Report . . . industrial conditions in Canada and U. S. [Cmd. 2833] (1927), 117 ff. Many periodical articles are devoted to the subject: Edinb. Rev. (April, 1916); Industrial Management (Nov., 1922); Harvard Bus. Rev. (Jan., 1925); Econ. Jour. (Dec., 1927); Round Table (June, Sept., 1925, Mar., 1927). *Standardization*: Survey, 1:266 ff., 4:172, 5:194 ff.; Report of (Chamberlain) Tariff Comm., 4:495 (and see index); Ann. Amer. Acad. Soc. and Pol. Sci. (1919), 82:247-252. *Research*: Survey, 1:305 ff., 5:214 ff. Publications of the Stationery Office contain reports of progress in many fields.

INTERVENTION: In general, Lucas; act of 1935, G. Lenicque, Réorganisation des grandes industries (P., 1939); P. Damade, Réorganisation industrielle, 1929-1937 (P., 1939).

INDUSTRIES: In general, Allen, Britain in depression; Plummer. *Agriculture*: Richardson, chap. 6; Round Table (Sept., 1934), 24:750 ff.; Quart. Jour. Econ. (1935), 49:356 ff. Food prices in Labour Gaz. (March, 1939), Supp't. *Coal*: Survey, 4:413 ff.; Liberal report, 341 ff.; Loveday, 57; Amer. Econ. Rev. (Mar., 1921), Supp't, 11:110; Damade, pt. 3, chap. 3. *Legislation*: Lucas, Lenicque (act of 1938). Recent statistics Rep. of Sec. for Mines, 1938, 15 ff., 24. *Cotton*: S. J. Chapman, Cotton industry, 78, and Lancashire cotton industry (Manchester, 1904), 252; Survey, 3:12, 51, 69 ff. Among many periodical articles see Harvard Bus. Rev. (July, 1924, Jan., 1930); Econ. Jour. (March, 1927); Amer. Econ. Rev. (Sept., 1928); Jour. Roy. Stat. Soc. (1928), 91:153-206. Legislation from Lucas, Damade, Lenicque. *Iron*: Survey, vol. 4; gen-

eral references as above. *Machinery*: Survey, Vol. 4, chap. 2, 5:241; W. H. Dawson, ed., *After-war problems* (N. Y., 1917), 126, 206, Henry Carter, *Control of drink trade* (L., 1918), 285; Farnham, 86, 97; Lloyd and Austin, 63, 136.

CHAPTER XII. ENGLAND: PROBLEMS, 1918-1939

UNEMPLOYMENT: Statistics from Stat. abstract, 1937, 82:132 ff., and Labour Gazette. *Occupations*: Stat. abstract, 1937, 82:128; League of Nat., Stat. year book, 1934-35, 46.

LABOR: *Wages*: Liberal report, 6, 14 ff.; Survey, 5:95, 152; Flux in Jour. Roy. Stat. Soc. (May, 1913), 563; J. A. Hobson, *Work and wealth* (N. Y., 1914), 242. *Hours*: Survey, 2.97, 5:103. *Criticism*: Liberal report, 144 ff.; Survey, 5:239 ff.; Daily Mail trade union mission to U. S. (L., 1926), 6, 32, 76; Report indust. conditions, 20; Garton Foundation, Memorandum on industrial situation (L., 1919), 49.

UNEMPLOYMENT RELIEF: Summary from Handwörterbuch der Staatswissenschaften, fourth ed., 1:816; Survey, 5:131 ff.; Liberal report, 275; Siegfried, *England's crisis*, 78 ff.; National Industrial Conference Board, *Tax burdens* (N. Y., 1925), 20; Malthus, *Essay*, 7th ed, Book 4, chap. 6. *Wages and Costs*: Labour Gazette (July, 1931), 39.253; Survey, 5:254-257; G. Vinot, *Difficultés de l'industrie Britannique* (P., 1932), 49 ff.

CRISIS: Statistics of balance from Stat. Abstract and Bd. of Trade Jour. (Feb., 1939), 142:288. See that and earlier volumes for explanation and analysis. Electoral statistics from Natl. Rev., 1931; figures differ slightly according to the source.

TARIFF: In general, Francis, Benham; Weiller in Rev. d'Ec. Pol. (1931), 45:1417 ff.; Salter in Foreign Affairs (Jan., 1932), 10:188-200. Statistics from Stat. Abstract and Bd. of Trade Jour., which give, however, percentages only of general imports; my calculations for imports retained. Criticism in Benham, 105; Round Table (June, 1937), 37:515 ff.

RECOVERY: Benham, 218, 247 ff.; League of Nat., World econ. survey, 1938-39, 21; Lenicque, 69; M. Bye in Rev. d'Ec. Pol. (Mar., 1935), 49:247-284; J. Pouzin, *Evolution écon. de la Gde Bret.* (P., 1395), 312. Index of production of London and Cambridge Service would make extent of recovery much less than that shown by index of Bd. of Trade.

CHAPTER XIII. FRANCE TO 1789

GENERAL: André Siegfried, *France, a study in nationality* (New Haven, 1930), 2; J. Bertillon, *Dépopulation de la France* (P., 1911), following Levasseur. *Huguenots*: Lavis et Rambaud, *Hist. Gén.*,

6:302, 746; Germain Martin, *Grande industrie sous Louis XIV* (P., 1899), 207 ff.; H. Sée *Französische Wirtschaftschichte* (Jena, 1930), 1:253. *Political*: Hist. Gén., 5:329 ff.; J. B. Perkins, *France under Mazarin* (N. Y., 1886), 1:43 ff. *Absolutism*: A. Oncken, *Gesch. d. Nationalökonomie* (Leipzig, 1902), 150; Voltaire, *Age of Louis XIV* (L., 1752), 1:115; Hist. Gén., *passim*. *Finance*: Higgs in *Cambridge mod. hist.*, 8:66 ff.; C. Gomel, *Les causes financières de la révolution française* (P., 1892), 1:257 ff.; G. Fagniez, *Economie sociale de la France* (P., 1897), 22, A. Delahante, *Une famille de finance* (P., 1881), 1:276; M. Kovalewsky, *La France économique et sociale* (P., 1909), 1:117; Lowell, Eve, 214 ff.; Tocqueville, 156. *Tax farming*: Delahante, 1:190 ff.; Fagniez, 341; Adam Smith, *Lectures on justice* (Oxford, 1896), 245. *Burden*: Taine, 370; J. B. Perkins, *France under Louis XV* (Boston, 1897), 1:43.

AGRICULTURE: Kovalewsky, 1:55, 259, 345, 356; Paul Darmstädter, *Befreiung der Leibeigenen* (Strassburg, 1897), 18; *Handwörterbuch der Staatswissenschaften*, 2d ed., 2:383; G. D'Avenel, *Histoire économique* (P., 1898), 1:249, 294 ff.; Levasseur in Lavis et Rambaud, *Histoire générale* (P., 1896), 7:658 ff., cf. 8:17; Tocqueville, 125; Taine, 38; Coyer, *La noblesse commerçante* (P., 1756).

CONDITION OF CULTIVATORS: Kovalewsky, 1:222 ff.; Champion in *Histoire générale*, 8:20 ff., Taine, 54, 340 ff.; D'Avenel, 385; Albert Babeau, *La vie rurale* (P., 1885), 85 ff.

MANUFACTURES: *Roads*: Heckscher, *Mercantilism*, 1:80 ff.; H. and G. Bourgin, *L'industrie sidérurgique* (P., 1920), 471; E. Levasseur, *Histoire des classes ouvrières avant 1789* (P., 1900-01), 2:82 ff., 288, 373; H. Pigeonneau, *Hist. du commerce* (P., 1887), 2:72, 372. *Gilds*: Levasseur, vol. 2, *passim*; C. W. Cole, *Colbert* (N. Y., 1939), 2:442, 456; L. Mosnier, *Origines de la grande industrie* (P., 1898), 4; Kovalewsky, 1:34; W. Roscher, *System d. Volkswirt.*, 6th ed., 3:623, 631; A. des Cilleuls, *Hist. de la grande ind.* (P., 1899), 101 ff., 113 ff. *Regulation*: sources above, Heckscher, 1:137 ff.; Cole, 2:363 ff.; Germain Martin, 61 ff., 96 ff., 147, 340; A. Dubois, *Hist. des doctrines écon.* (P., 1903), 273, 279. *Royal Manufactures*: Same sources. For general conditions add E. Tarlé, *L'industrie dans les campagnes* (P., 1910); Kovalewsky, 2:1, 102, 170 ff. *Invention, etc.*: Levasseur, 2:539; Martin, 103, 166 ff.; *Rapport sur l'industrie française* (P., 1919), 1:304-312; J. T. Merz, *History of European thought* (Edinb., 1904), 1:99; C. Normand, *La bourgeoisie française* (P., 1908), 185 ff. It is noteworthy that France offered instances of what was unknown to Young in England, industrial enterprises founded by landed gentry: Kovalewsky, 2:105; R. Lévy, *Historie écon. de la industrie cotonnière* (P., 1912), 49. M. Rouff, *Tubeuf, un grand industriel français* (P., 1922), gives an interesting sketch of a promoter of the period.

CHAPTER XIV. FRANCE: AGRICULTURE

GENERAL: Internat. Stat. Year-book (1927), 44, 158; Statistical Abstract, Foreign (1914), 104; Michel Augé-Laribé, *Le paysan français* (P., 1923), 14, 35; Siegfried, *France*, 11; Bertillon, *Dépopulation*, 29; Werner Sombart, *Der mod. Kapitalismus*, 3:277; Clapham, 364.

AGRICULTURE: Estimates of distribution of land from Alfred de Foville, *Le morcellement* (P., 1885), 44, 52, 58, and F. W. Wolters, *Studien uber Agrarzustande* (Leipzig, 1905), 16 ff. Some authors, as Loutchisky, *La petite propriété en France avant la rev.* (P., 1897), 79, would ascribe more land to the peasants. See Soc. Sci. Ab. (1930), No. 6031, for recent discussion by Lefebvre.

CONDITIONS, 1815 ff.: *La statistique agricole de 1814* (Paris, 1914) [by indicating the locality I avoid the need of giving page references]. Later conditions are described in a more general way in English reports on the state of agriculture and the condition of the population, dated 1834, ordered printed 1836, cited as Reports, 1836; see table of field systems, 69 ff. *Labor*: Charles Dupin, *Forces productives et commerciales de la France* (P., 1827), 1:23 ff.; [Earl Lovelace], *Review of the agricultural statistics of France* (L., 1848), 10. The table on the money yield of land is from Lovelace, 7 ff.; he says that it was based on an elaborate investigation by the government: "More than 100,000 persons were employed in the task, which was executed with great care and accuracy." Wheat yields from *Annuaire Statistique* (1913), 43*. [References to *Résumé rétrospectif* of *Annuaire* are marked by asterisk.]

AGRICULTURAL CLASSES: L. S. Sackville-West, *Report on tenure of land in France* [C. 66], in *Parliamentary papers* (1870), 67:59, 69; Lovelace, 23; J. H. Schnitzler, *Création de la richesse* (P., 1842), 1:9 ff.; M. Block, *Statistique de la France*, 1st ed. (P., 1860), 2:24. Figures of the classes which I have numbered 1-9 were in the agricultural statistics of 1868, and apparently refer to 1862. Figures of fragmentation from Lovelace, 22; they suffer not only from the mixture of urban and rural, but still more from the fact that, being made for a cadaster, they counted separately parcels of land used for different purposes even though they were contiguous.

AGRICULTURAL CONDITIONS: Details from *Stat. agr.* (1814), and *Reports* (1836). Wages and budget from Block, 2:32 ff.; the price of wheat varied in two years from 17 to 33 fr. per hl. Tax on doors and windows from Block, 1:374.

AGRICULTURE, 1870 ff.: Block, 2d ed. (P., 1875), 1:56; Grandea, in *Jour. des Economistes* (1899), V., 40:171 ff.; D. Zolla, *Questions agricoles* (P., 1894), 116, 304. Wheat yields, being averages of the averages in the *Ann. Stat.*, are only approximations. *Implements*: M. Augé-Laribé, *L'évolution de la France agricole* (P., 1912), 57.

CONDITIONS, 1900: Comparative yields from B. Rambaud, *Les progrès de l'agriculture en France*, Rev. d'Econ. Pol. (May, 1920), 34: 305; the Yearbook of agricultural statistics of the Internat. Inst. of Agr. at Rome (1928-29), ranks France thirteenth in wheat for the years 1909-13. Yields per person in Ballod, *Schmoller's Jahrbuch für Gesetzgebung* (1905), 29:831; he thought the French yield was a quarter or a third lower than the German. Holdings from Augé-Laribé, *Evolution*, 103-104; see there, 78 ff., for distinctions and criticism. *Large and Small*: La petite propriété rurale en France (P., 1909), [a monograph of the Ministry of Agriculture], 294 ff.; Augé-Laribé, *Evolution*, 93, 98; F. Evrard, *Les grandes fermes entre Paris et la Beauce*, *Annales de Géographie* (May, 1923), 32:210-225 [instance on p. 214 of a farm of 192 ha. still in fragments]. *Fragmentation*: Foville, *Morcellement*, 200 and passim; G. W. Coopland, *Abbey of St. Bertin* (Oxford, 1914), 121; Lady Verney, *How the peasant owner lives* (L., 1888), 6, 179; Augé-Laribé, *Paysan*, 247 [gain of 30% by consolidation]; especially A. Girault, *Le morcellement parcellaire en France*, Rev. d'Econ. Pol. (Oct., 1920), 34:607-621. Many examples of thrift in Lady Verney and in Hannah Lynch, *French life* (N. Y., 1901). Balzac's *Paysans* dates from the '20's; the author spent 8 years on it and thought it the most important work which he had undertaken. The experience of M. Dussard, Verney, 13, parallels that of Balzac's proprietor; and cf. Lovelace, 24 ff., for "black bands," etc. Qualified judges think that Balzac and Zola are more true to the facts than Georges Sand and Bazin. *Mentality*: Y. Keravic, in *Econ. Jour.* (1900), 10:12; *Fortnightly Rev.* (1900), 74:34; John Morley, *Life of Gladstone*, 3:486; R. Richardson, *Europe from a motor car* (Chicago, 1914), 175; *Lit. Digest* (Jan. 2, 1909) [on examinations of recruits cf. Herlaut, in *Rev. de Paris* (Dec. 1, 1911), 18:6:643-651]; Augé-Laribé, *Paysan*, 283 ff.; E. Faguet, *Politiques et moralistes* (P., 1891), 1:360; J. H. Rose, *Development of European nations* (N. Y., 1905), 1:55; Blowitz, *Memoirs* (N. Y., 1903), 143. See also Jules Sion, *Paysans de la Normandie* (P., 1909).

CHAPTER XV. FRANCE: MANUFACTURE

SURVEY: Clapham, 53, 240; Block, *Stat.* (1860), 1:54, 2:124-125. The census included in "small industry" some classes [transport, postal, commercial] which I have excluded in the text. Figures for textiles compiled from Block (1860), 2:127 ff. *Wages*: Official statistics (1852) put mean wage in textiles, including women and children, at about 2 fr.; wages in mining averaged barely higher, *Ann. Stat.* (1913), 105.* H. Sée, *La vie écon. de la France sous la monarchie censitaire* (P., 1927), cites Villermé's estimate about 1840, 2 fr. for a man, 1 fr. for a woman; cf. Report of 1829, cited later. *Steam*: Block, 2:127; *Ann. Stat.*, 1913, 54.* The figures of 1851 cannot be reconciled with those of 1843-45, quoted by Clapham, 63, and can be accepted only under reserve. *Small Industry*: Chaptal, *De l'industrie française* (P., 1819), 2:189; P. Leroy.

Beaulieu, La question ouvrière (P., 1871), 28; Block, Stat., 2:160; G. et H. Bourgin, Le régime de l'industrie en France de 1814 à 1830 (P., 1912, 1921), 1:9, 11, 78 ff., 91 ff., 333 ff., 2:x. *Development*: Sée, 49, 55; Clapham, 71 ff. *Steam*: C. Ballot, L'introduction du machinisme dans l'industrie française (P., 1923), 383 ff.; Lord, 209; it is hard to reconcile facts given there with the few engines of 1815, Clapham, 62; Sée, 65. English figures from Fong, Triumph of factory system, 35. Testimony from Enquête faite par ordre du parlement d'Angleterre pour constater le progrès de l'industrie en France (P., 1825), 80; the English original was not accessible. Alsace: Levy, 139. *Cotton*: I have combined the eight points of Baines, History of the cotton manufacture, 512 ff., and illustrated them with detail from Rapport de la commission libre nommée par les manufacturiers et negociants de Paris sur l'enquête relative à l'état actuel de l'industrie de coton en France (P., 1829). Levy, 154 ff., describes the gradual concentration of workers. *Iron*: Clapham, 60; Ann. Stat., 1913, 48*; Bourgin, L'ind. siderurgique, xxii ff., 463; Chaptal, 2:152; A. L. Dunham, Anglo-French treaty of commerce of 1860 (Ann Arbor, 1930), 161; George Porter, Progress of the nation (L., 1851), 288, 577. I use for comparison the French figure 153 fr. per ton, from Ann. Stat., but should note difference in price for different grades, Block, 2:183. On introduction of coke, Ashton, 38; Sée, 52; Clapham, 59. Table from Block, 2:182 ff. *Machinery*: Enquête, 4, 5, 66, 81, 85; J. W. Roe, English and American tool builders (New Haven, 1916), 6, 50, 59, 129, 142. *Labor*: Jour. des Econ. (March, 1924), 83:316 ff.; Gustav Schmoller, Umriss und Untersuchungen (Leipzig, 1898), 632, Bourgin, Régime, 1:39. Rapport, 1829, assumed 12 working hours, but Symons, Arts and artisans (1839), gives longer hours; cf. Sée, 106. On labor organization cf. Clapham, 76 ff.

DEVELOPMENT, 1850 ff.: Ann. Stat., Résumé rétrospectif (1929), 2*, 74*; Dessirier, in Bull. stat. gen. France (Oct., 1928), 18:104; Clapham, 260; Dunham, passim; Siegfried, England's crisis, 68; cf. A. Dumont, Dépopulation (P., 1890), quoting Poulot's assertion that of 10 manufacturers at least 8 brought up their sons to other careers. *Movement of Population*: Bertillon, 152 ff., quoting Tallquist; Babeau, Vie rurale, 237; J. Turquan et J. d'Auriac, La dépopulation française (P., 1917), 23; Richet, in Réforme Sociale (1891), 21:507 ff.; Dumont, passim. *Bourgeois*: Siegfried, France, 6; Verney, 147, 168; Ann. Stat. (1913), 209 [inheritances; cf. Willford I. King, Wealth and income (N. Y., 1915), 87]; French Census of occupations (1896), 4:ix.

ORGANIZATION: Recensement des industries, 1896 (P., 1901), 4:lxii; Recensement générale, 1921 (P., 1927), 1:Part 3, pp. 54, 61; Industries (1896), 4:199, group 4; U. S. Census of 1900, 7:lxixiii, cf. ibid. xxxix for rejection of figures of sole workers; R. B. Forrester, Cotton industry in France (Manchester, 1921), 44, 52; W. C. Mitchell, Business cycles (N. Y., 1927), 177; League of Nations, Memorandum on balance

of payments (Geneva, 1927), 2:128; Roscher, *System*, 3:513; H. Emerson, *Efficiency* (N. Y., 1909), 37 ff.; Lebon in *Internat. Monthly* (1901), 3:267.

INDUSTRIES: *Silk*: A. de Foville, *La France écon.* (P., 1887), 244; Berge, in *Rev. deux Mondes* (1890), 5:191; Gonnard, in *Rev. Econ. Internat.* (Aug., 1905), 2:3:260 ff., 279; Taussig, *Aspects of the tariff*, 229, 235. *Cotton*: Forrester, *passim*; *Enquête* (1824), 141; Copeland, 90, 352. *Wool*: Dunham, chap. 11; James, *History*, 526; Clark, 9 ff.; J. H. Clapham, *Woolen industries*, 222, 226. *Iron*: Foville, *France*, 218; Dunham, chap. 9; Jeans, *Iron trade*, 85; *Ann. Stat.* (1929), 4*. *Machinery*: W. Williams, *Horny hands* (N. Y., 1922), 251; *American Machinist* (1906), 29:I:263; (1908), 31.II:374, 636; Farnham, 165.

LABOR: *Bull. de Stat.* (Oct., 1918), 8:88. I have combined figures of proprietors, salaried workers, and wage earners to compare with U. S. Census (1900), 7:xlvi, xlviii; 8:31. *Wages*: *Ann. Stat.* (1929), 137*; Royal Commission on labour (1893) [C. 7063], 6:68; Report on cost of living in French towns [Cd. 4512], 1909; *Handwörterbuch der Staatswissenschaften*, 2d ed., 1:540 ff.; Clapham, 272.

CHAPTER XVI. FRANCE, 1918-1939

WAR LOSSES: Ogburn, 21; M. Augé-Laribé, *Le paysan français après la guerre* (P., 1923), 43, Ragatz, in *Current History* (May, 1923), 18:276; *Bulletin du Ministère de Travail* (Sept., 1931), 38:222 ff.; H. G. Moulton and C. Lewis, *French debt problem* (N. Y., 1925), 20, 103; J. M. Keynes, *Econ. consequences of the peace* (N. Y., 1920), 126 ff.; *Econ. Rev. of Foreign Press* (Jan. 9, 1925, Nov. 5, 1926); Eleanor L. Dulles, *The French franc* (N. Y., 1925), 5:132; A. Fontaine, *L'industrie française pendant la guerre*, P., n. d. (Carnegie series), 40 ff.; M. de Ville-Chabrolle, *La population active en France avant et après la guerre*, *Bull. de Stat.* (Dec., 1931), 21:147 ff. [valuable statistics]; G. Jèze, *Economic and financial position of France*, *Quarterly Jour. of Econ.* (Feb., 1921), 35:180 ff.

AGRICULTURE: *Ann. Stat.*, 1929, 59*; *Bull. de Stat.*, Dec., 1931, 21:17; Ogburn, 481; U. S. Bureau Foreign Commerce, *Special Agents*, 1920, 191:11; Augé-Laribé, *Paysan*, 89; Ville-Chabrolle, 91 ff.; Augé-Laribé, *Evolution*, 124, and in *Rev. d'Econ. Pol.*, 1930, 44:4; C. Fouchier, *Essai sur l'abandon des campagnes* (Poitiers, 1914), esp. chaps. 2, 3. *Wages*: Ogburn, 488; Fouchier, 62 ff.; *Bull. du Ministère de Travail* (June, 1931), 38:125-133 [6,000 is a rough median; the extremes were 3,000 and 9,000, but in general the dispersion was small]; Augé-Laribé, *Labour conditions in French agriculture*, in *Internat. Labour Rev.* (Jan., 1932), 25:23 ff.; G. Risler, *Le travailleur agricole français* (P., 1923), chap. 3, 80 ff.

TECHNICAL: A. Alexandre, *La vie agricole dans la Picardie orientale* (P., 1928), 31 ff. [the author speaks of the scattering as still general in France]; U. S. Bureau Foreign Commerce, Special Agents, Report on farm implements and machinery in France (1920), 191:15, 20, 24 *Peasant*: Augé-Laribé, *Evolution*, 271 ff., and *Paysan*, 134 ff.; Alexandre, 12, 38. *Profits*: Jèze, 179; defending the peasant Augé-Laribé, *Paysan*, 38, 62 ff., 136 ff., and in *Rev. d'Econ. Pol.* (1930), 44:648; Lair in *Rev. Econ. Internat.* (July, 1926), 18:3:41. *Yield*: Augé-Laribé, *Rev. d'Econ. Pol.* (1930), 44:5; *Ann. Stat.* (1929), 54*; Ogburn, 493 [fertilizer].

MANUFACTURE: *Ann. Stat.*, 1929, 59*; *Bull. de Stat.* (Dec., 1931), 21:17 [cf. Ogburn, 97 ff., and App. B.]; Fontaine, 83, 87. *Industrialization*: Ogburn, 186 ff., 219 ff., 252 ff.; *Ann. Stat.* (1929), 70*, 149, Levainville, in *Geographical Rev.*, 13 88; R. Blanchard, *Utilization of water power in France*, *Harvard Bus. Rev.* (Jan., 1928), 6:176 ff.; A. Pawlowski, *L'industrie électrique en France*, *Rev. Econ. Internat.* (Oct., 1928), 20.4:19-36. *Size*: Recensement, 1921 (P., 1927), 1: Part 3:62, 66-67 [I use the figures for the 87 old departments in 1921 for comparison with 1901; the addition of Alsace and Lorraine raises the ratio of large less than would be expected]. The second table is a combination of figures in *Recensement industriel* (1896), 4:199; *Recensement generale* (1921), 1:Part 3:135, group 4; and U. S. Census of 1919, 8:90. W. L. Thorp, *Integration of industrial operation* (Wash., 1924), 89; Henry Ford, *Today and tomorrow* (N. Y., 1926), 109.

ORGANIZATION: G. Martin, *Industrial reconstruction of France*, *Harv. Bus. Rev.* (Apr., 1927), 5:258 ff.; Farnham, 8, 204, 234 ff.; U. S. Bureau For. Com., Spec. Agents, Report on industrial machinery in France (1920), 204:9 ff. *Coal*: *Rev. d'Econ. Pol.* (1930), 44:673; Ogburn, 224; Taussig, in *Quart. Jour. Econ.* (Nov., 1924), 39:98; U. S. Bureau of Mines (*Bull.*, 1931), 341.104. *Labor*: A. Siegfried, *French industry and mass production*, in *Harv. Bus. Rev.* (Oct., 1927), 6:5; Whiting Williams, *Horny hands and hampered elbows* (N. Y., 1922), 251, National Industrial Conference Board, *Problems of Labor* (Boston, 1919), 161. *Business*: Ville-Chabrolle, 129, 133; Ogburn, 551 ff.; U. S. Trade Information Bull. (1924), No. 186 [steel]; *Rev. d'Econ. Pol.* (1920), 34:488; Martin, 263.

INDUSTRIES: Ville-Chabrolle, 101; N. W. Posthumus, *French cotton industry*, *Harv. Bus. Rev.* (Jan., 1926), 4:179 ff.; Blanchard, *ibid.*, 6:186; Siegfried, *French industry*, 7. *Iron*: J. Levainville, *French iron industry after the war*, *Geog. Rev.* (1923), 13:86 ff.; Ogburn, chap 11; U. S. Bureau For. Com., Spec. Agents (1920), No. 204, and Trade Information Bull. (1925), No. 367; *Rev. d'Econ. Pol.* (1920), 44:681; *Ann. Stat.* (1929), 2*; Williams, 96, 216. *Metal*: Ville-Chabrolle, 145; U. S. Trade Information Bull. (1928), No. 543, *French market for industrial machinery*. *Automobile*: *Rev. d'Econ. Pol.* (1929), 43:719 ff.; (1930), 44:796 ff.; U. S. Trade Information Bull. last cited, 543:11; Farnham,

114, 164; André Citroën, *L'avenir de la construction automobile*, Rev. Polit. et Parl. (May 10, 1929); I follow the summary in Soc. Sci. Ab., No. 10248.

GENERAL: *Income*: The estimate of Bernonville, in Bull. de la Stat. (Sept., 1931), 21:557, includes the item of pensions to the amount of fr. 6.5 milliard, but is criticized by Germans as too low; cf. Wirtschaft und Statistik (June, 1932), 12:12; Sonderbeilage, 11. *Wages*: Bull. de la Stat. (March, 1931), 20:216 ff.; U. S. Monthly Labor Rev. (Jan., 1932), 34:169 ff. *Labor*: D. J. Saproos, Labor movement in postwar France (N. Y., 1931), 233.

DEPRESSION: Political narrative and incidents from Werth, Annual Register and Current History. Statistics from Ann. Stat., 1938, and Bull. de Stat. Gén., Apr. and Sept., 1939. German statistics from Stat. Jahrbuch.; Inst. f. Konjunkturforschung, Halbjahrsber., May, 1939; *id.*, Statistik, Aug., 1939; Reichs-Kredit-Gesellschaft, Jan., Aug., 1939.

CHAPTER XVII. GERMANY TO 1871

1500 ff.: *Technical*: F. v. Bezold, Staat und Gesellschaft (Berlin, 1908), 55; Lavissee, Hist. Gén., 4:385. *Classes*: Heckscher, Mercantilism, 1:56 ff., 132 ff.; K. Lamprecht, Deutsche Gesch. (2d ed., Berlin, 1894 ff.), vol. 5, passim; J. Falke, Gesch. d. deutschen Handels (Leipzig, 1859), 2:67, 140. *Agrarian*: Kötzschke, Deutsche Wirt., 134 ff.; A. Buchenberger, Agrarwesen u. Agrarpol. (Leipzig, 1892), 1.94 ff.; C. J. Fuchs, Untergang des Bauernstandes (Strassburg, 1898), 71, 91, 107; F. Grossmann, Rechtsverhältnisse . . . Brandenburg (Leipzig, 1890), 21, 39 ff. *Wars*: G. Freytag, Pictures (L., 1862), 2:83, 160, 200; A. Oncken, Gesch. d. Nationalök. (Leipzig, 1902), 226; H. v. Treitschke, Deutsche, Gesch. (Leipzig, 1879), 1:5; A. Dopsch, Naturalwirtschaft (Wien, 1930), 249.

1800 ff.: There are three books on the economic history of Germany in the nineteenth century on which I have drawn so freely that I shall omit detailed references to them: Ludwig Pohle, Die Entwicklung des deutschen Wirtschaftslebens im letzten Jahrhundert, 2d ed. (Leipzig, 1908) [an admirable sketch in 150 pages]; A. Sartorius von Waltershausen, Deutsche Wirtschaftsgeschichte, 1815-1914 (Jena, 1920) [most detailed, with bibliographies]; Werner Sombart, Die deutsche Volkswirtschaft im neunzehnten Jahrhundert, 7th ed. (Berlin, 1927) [general, most suggestive].

CONDITIONS: H. Richelot, L'association douanière allemande, 2d ed. (P., 1859); W. Roscher, System, 3:279; G. F. Knapp, Die Bauernbefreiung und der Ursprung der Landarbeiter (Leipzig), 1:67 ff.; Josiah Stamp, British incomes (L., 1916), 514; Margaret E. Hirst, Life of Friedrich List (N. Y., 1909), 20; W. Lotz, Ideen der deutschen Handelspolitik (Leipzig, 1892), 11 ff.

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AGRICULTURE: Soc. Sci. Ab. (1931), No. 2541; M. Mendelson, *Die Entwicklungsrichtungen der deutschen Volkswirtschaft* (Leipzig, 1913), 21; figures of area from *Statistisches Handbuch* and *Statistisches Jahrbuch*.

CHAPTER XVIII. GERMAN MANUFACTURE,

1871-1914

DEVELOPMENT: Mendelson, 25; A. Braun in *Yale Rev.* (1902), 11:10; R. S. Baker, *Seen in Germany* (N. Y., 1901), 313; Sir Philip Dawson, *Germany's industrial revival* (L., 1926), 2; Albert Hesse, *Die wirtschaftliche Entwicklung des deutschen Reiches* (Jena, 1913), 33.

FORMS: Statistics from K. Bücher, *Entstehung der Volkswirtschaft*, zweite Sammlung (Tübingen, 1921), 90, and *Statistik des deutschen Reiches*, 413:274 ff. *Handicraft*: R. Lavollée, *Classes ouvrières* (P., 1884), 1:123 ff.; Schmoller's *Jahrbuch für Gesetzgebung* (1913), 37:2144; cf. W. Sombart, *Der mod. Kap.*, 2:83. *Merchant Employer*: *Handbuch der Wirtschaftskunde Deutschlands* (Leipzig, 1901), 1:310 ff.; G. Schönberg, *Handbuch der Pol. Oek.* (Tübingen, 1896), 2:1:490, 498; Schwiedland, in *Grundriss der Socialökonomik* (Tübingen, 1914), 6:3.

EARLY FACTORY: Chapman, *Work and wages*, 1:153; Georges Blondel, *L'essor industriel du peuple allemand* (P., 1898), 151; A. J. Wilson, *Resources of modern countries* (L., 1878), 1:345; Schoenhof, in *Forum* (1901), 31:90; Price Collier, *Germany* (N. Y., 1913), 121.

FACTORS: Sombart, *Volkswirtschaft*, 106-121; cf. A. P. Usher in *Amer. Hist. Rev.* (July, 1918), 23:797-815; F. Naumann, *Central Europe* (L., 1916), 118 ff.; Blondel, 110 ff. *Discipline*: August Bebel, *My Life* (Chicago, n. d.), 17; Howard, 40, 76, 80; F. E. Farrington, *Commercial education in Germany* (N. Y., 1914), 54; Collier, 392; Chapman, 1:166. *Education*: Report of Commercial Agent Harris, dated Oct. 28, 1903; R. G. Lévy in *Rev. Deux Mondes* (1898), 1:809; Naumann, 112, 125; Shadwell, 1:15, 2:75; Farnham, 419. *Books*: *Jahrbücher für Nationalökonomie* (1923), 121:386; *Lit. Digest* (Dec. 5, 1903); 2:295. *Moral*: Friedrich List, *National system of political economy* (L., 1904), 316; Shadwell, 1:43, 2:250; Collier, 371.

LEADERS: S. H. Higgins, *The dyeing industry* (Manchester, 1919), 69, 141 ff.; Roscoe, in *Monthly Rev.* (May, 1901), 3:45; Howard, 71; report of Consul Harris of Mannheim, *New York Times* (Feb. 5, 1905); Dawson, *Evolution*, 79, 86; Schmoller's *Jahrbuch für Gesetzgebung* (1912), 36:443 ff.; Elster in *Jahrbücher für Nationalökonomie* (April, 1929), *Soc. Sci. Ab.* (1930), No. 10251.

METHODS: Baker, 199 ff.; *Engineering Progress* (Feb., 1924), 5:28; M. Schwob, *Le danger allemand* (P., 1897), 191; Dawson, in *Fortnightly Rev.* (1914), 102:758 ff.; Shadwell, 1:15, 26, 39; K. Francke, *The German spirit* (N. Y., 1916), 5; Roscoe, 44; B. H. Thwaite, in *Nineteenth Century* (1896), 40:926 ff.; Lévy, 810; W. H. Dawson, *Evolution*, 78, 82 ff.; P. Dawson, 5; *American engineering competition* (N. Y., 1901), 111; R. C. Epstein, in *Quart. Jour. Econ.* (Feb., 1926), 40:252; Lloyd, *Cutlery trades*, 23; Higgins, 128, 137.

INDUSTRIES: *Metallurgy:* Jeans, *Iron trade*, 80 ff.; E. E. Williams, *Made in Germany* (L., 1987), 40 ff.; Chapman, *Work and wages*, 1:73; H. Schumacher, *Weltwirtschaftliche Skizzen* (Leipzig, 1911), 419 ff.; V. Cambon, *Les derniers progrès de l'Allemagne* (P., 1914), 159 ff. *Machinery:* Dawson, *Evolution*, 76; Shadwell, 1:149, 166, 214; P. Göhre, *Three months in a workshop* (L., 1895), 52; *American engineering competition*, 97; Baker, 34; *American Machinist* (1908), 31:II:636; Farnham, 166; Lloyd, 43, 348, 381. *Textiles:* Schulze-Gävernitz, *Cotton trade*, 78 ff.; Copeland, *Cotton manufacturing*, 90, 277, 331; Chapman, *Work and wages*, 1:156, 167; Shadwell, 2:435. *Chemical:* Howard, 60 ff.; Kershaw, in *Fortnightly Rev.* (1915), 104:325; Lévy, 812; Higgins, 97; Dawson, *Evolution*, 85; Cambon, 183 ff. *Electrical:* *Nat. Ind. Conf. Bd.*, *Rationalization of German industry* (N. Y., 1931), 106; Howard, 58; Cambon, 167 ff.

GENERAL: P. Dawson, 6 ff.; *Nat. Ind. Conf. Bd.*, *Rationalization*, 7, 40. *Wages:* Göhre, 14; *Jahrbücher für Nationalökonomie* (1913), 46:411; Farrington, 50. The table is from R. Lauret, *Les conditions de la vie en Allemagne* (P., 1923), xiii. I do not find in the English reports [Cd. 4032] (1908), Vol. 108 (Germany); [Cd. 4512] (1909), Vol. 91 (France); [Cd. 5609] (1911), Vol. 88 (U. S.), the summary in the form reproduced in the text. Figures vary according to the standard of measurement chosen, and their significance should not be strained. *Standard of Living:* Karl Helfferich, *Deutschlands Volkswohlstand, 1888-1913* (Berlin, 1914), 86 ff.; Schulze-Gävernitz, *Cotton trade*, 186; Shadwell, 2:249; W. J. Ashley, *Progress of the German working classes* (L., 1904), 51; Howard, 120.

CHAPTER XIX. GERMANY AFTER 1918

References to Angell's book, of which free use has been made, are omitted. The compendious survey of German economic development

entitled *Strukturwandlungen der Deutschen Volkswirtschaft*, 2 vols. (Berlin, 1928), consisting of lectures delivered by many different authorities, is cited by name of the editor, Dr. Bernhard Harms, with references to the 2d ed., revised (Berlin, 1929). This book contains, 2:471-509, a systematic bibliography of the more important works on postwar conditions and problems.

REPARATIONS: H. W. V. Temperley, *History of the peace conference* (L., 1920), 2:51; Moulton and McGuire, 75, 80, Appendix B.; H. G. Moulton, *The reparations plan* (N. Y., 1924); Max Sering, *Germany under the Dawes plan* (L., 1929), 34; J. H. Williams, *German foreign trade and reparation payments*, Quart. Jour. of Econ. (May, 1922), 36:495 ff.; G. Greer, *The Ruhr-Lorraine industrial problem* (N. Y., 1925), 198; Report of Agent General for reparation payments (Berlin, May 21, 1930), 335-336.

INFLATION: Max Hermant, *Les paradoxes économiques de l'Allemagne moderne* (P., 1931), 29; René Lauret, *Les conditions de la vie en Allemagne* (P., 1923), 70 ff., 166. Sir P. Dawson, 29, thinks the inflation was deliberate. For detailed study of effects of inflation on distribution, see Richard Lewinson, *Die Umschichtung der europäischen Vermögen* (Berlin, 1925).

AGRICULTURE: *Economic Review of the Foreign Press* (Feb. 4, 1921), 3:222; Fritz Beckmann, *Die Kapitalbildung der deutschen Landwirtschaft während der Inflation*, Schmoller's *Jahrbuch für Gesetzgebung* (1924), 48:1:113 ff., 122 ff.; Lauret, 32 ff.; Harms, 1:117, 129, 143, 161 ff.; E. de Felcourt, *Le crise agricole allemande*, *Revue Econ. Internat.* (July, 1926), 18:3:50, 54; Sering, 182 ff.; *Handwörterbuch der Staatswissenschaften*, fourth edition, *Ergänzungsband* (Jena, 1929), 768, 787; *The science of farm labour*, *Internat. Labour Rev.* (1927), 15:381, 389.

INDUSTRIAL ORGANIZATION: Postwar conditions in the German toy industry, U. S. Trade Information Bull. (Sept. 8, 1924), 267:2, 9, 14; Harms, 1:95, 218, 335 ff.; article *Aktienrecht* in *Handwörterbuch* (1929), 1-8; Hermant, 116 ff.; R. Liefmann, *German industrial organization since the world war*, Quart. Jour. of Econ. (Nov., 1925), 40:93 ff.; Natl. Ind. Conf. Bd., *Rationalization in German industry* (N. Y., 1931), 30 ff.

RATIONALIZATION: In general, Conference Board as above; Walter Meakin, *The new industrial revolution* (L., 1928), and articles *Rationalisierung* in *Handwörterbuch* (1929), 708-817. Details from Harms, 1:199 ff., 213, 227; Hermant, 136, 151; Farnham, 34, 202, 409; P. Dawson, 237. *Industries:* Harms, 1:209 ff.; Conference Board, 82 ff., 119 ff.; Meakin, 36 ff., 97, 104, 127 ff., 149.

CHAPTER XX. GERMANY: TRANSITION TO NATIONAL SOCIALISM

FOREIGN TRADE: Harms, 1:193, 396 ff.; Report of Agent General of Reparation Payments (Berlin, 1930), 249 ff., 266; Conference Board, 137, 146; Sering, 144 ff.; Hermant, 93 ff.

LABOR: Harms, 1:463 ff., 486; Hermant, 172; Lauret, xi, 11, 50, 136; Econ. Rev. of Foreign Press (Feb. 11, 1921), 3:244; U. S. Fed. Reserve Bull. (Jan., 1923), 9:61; Dreher in *Annalist* (Jan. 6, 1922), 19:199; Sering, 161, 170, 172; Statistisches Jahrbuch für das Deutsche Reich (1930), 32; Internat. Labor Rev. (Oct., 1928), 18:639.

UNEMPLOYMENT: Harms, 1:65, 393, 482; Hermant, 154; Wirtschaft und Statistik (Apr. 2, 1932), 12:240.

NAZI POLICY: Trivanovich, 33; M. de St. Jean, *Politique écon. et fin.* (P., 1936), 99; Hauser, 66 ff. *Income*: Stat. Jahrbuch, 1938, 559; Wirtschaft und Stat. (Sept., 1939), 19:660 ff. See Balogh, 466, for discussion of figures. He thinks it "more than doubtful" whether armament expenditures are included in public investment, but the huge sums spent on them, if added, would swell the total beyond belief; and the Reichs-Kredit-Gesellschaft, July, 1939, 5, appears to include them. Cf. Institute of Business Research (Aug. 11, 1939), 82, and Vierteljahrshefte zur Wirtschaftsforschung (1939-40), 24.

NEW PLAN: Besides Guillebaud and Trivanovich, League of Nations, World econ. survey, 1934-35, 35; Inst. Bus. Research, Jan. 11, and May 23, 1939, Suppl't. July 27, 1939; Round Table (Dec., 1938), no. 113, 87. *Direction*: Institute as above, table from Stat. Jahrbuch, 1938, 127* and Reichs-Kredit-Gesellschaft (cited hereafter as RKG.), Aug., 1939, 37. Quotation from Francis, Britain's econ. strategy, 303.

CHAPTER XXI. GERMANY: REARMAMENT, AUTARCHY

REGULATION: A. Tillmann, *L'organisation écon. et soc.* (P., 1935), 156 ff.; Hans Priester, *Das deutsche Wirtschaftswunder* (Amsterdam, 1936), 48 ff.; quotation from Hauser, 149.

REARMAMENT: Guillebaud, Priester, 29 ff.; fat statistics from Stat. Jahrbuch 1938, 383, and Wirt. u. Stat. (June, 1939), 19:463. Statistics of production from Inst. Bus. Research, Jan. 26, 1939.

AGRICULTURE: Guillebaud, 28; Hauser, 198 ff.; E. Roll, *Spotlight on Germany* (L., 1933), 93 ff. *Hereditary farm*: Galbraith; statistics from Wirtschaft u. Stat. (1939), 19:166 ff. *Self-sufficiency*: RKG. (July, 1939), 7, 12; Brandt, in *Foreign Affairs* (April, 1940), 18:508, 510.

MANUFACTURE: RKG., 1939, part 1, 1; Inst. Bus. Research, Feb. 23, 1939, and June 29, 1939, 67. Quotation from RKG., July, 1939, 4. *Productivity*: Vierteljahrshefte z. Wirt., 1939-40, 9; Conference Board Record, 2:292.

LABOR: Hamburger and the general works above; Waelbroeck and Bessling in Internat. Lab. Rev. (Feb., 1941), 43:127-152. I follow this last, 146 ff., as to hours; statistics in Inst. f. Konjunkturforschung, Statistik (Aug., 1939), 14:40, would give a more favorable impression. *Wages*: Inst. Bus. Research, Aug. 26, 1939; Stat. Jahrbuch, 1938, 338, 561; Vierteljahrshefte z. Wirt., 1939-40, 15. Cf. Guillebaud, 187 ff., and Balogh, 473, with criticism. *Standard*: food, Stat. Jahrbuch and Wirt. u. Stat. (June, 1939), 19:462; consumption goods, Vierteljahrshefte, 1939-40, 25, with suggestions which would increase available volume. Method of compiling statistics of consumption is described in Vierteljahrshefte zur Stat., 1937, Heft 1, 47 ff.

CHAPTER XXII. RUSSIA BEFORE AND AFTER EMANCIPATION

References will in general be omitted to Mavor, to Wallace, to Robinson, and to the translation of Anatole Leroy-Beaulieu, *The empire of the tsars*, 3 vols. (N. Y., 1893).

PHYSICAL: K. A. Wieth-Knudsen, *Bauernfrage und Agrarreform in Russland* (München, 1913), 3 ff.; George Vernadsky, *A history of Russia* (New Haven, 1929), 4; quotation from the U. S. Commercial Attaché at Petrograd, Ann. Amer. Ac. Soc. and Pol. Sci. (July, 1919), 84:91.

HISTORY: In general, Vernadsky, and Josef Kulischer, *Russische Wirtschaftsgeschichte* (Jena, 1925); Paul N. Miliukov, *Essai sur l'histoire de la civilisation russe* (P., 1901); Vladimir G. Simkhovitch, in *Handwörterbuch der Staatswissenschaften*, second ed., 2:399 ff.

SERFDOM: Peter A. Kropotkin, *Memoirs of a revolutionist* (Boston, 1899), 51 ff.; Nikolai V. Gogol, *Dead souls* (N. Y., 1886); H. von Samson-Himmelstjerna (Uspensky), *Verlumpung der Bauern* (Leipzig, 1892), 94; Howard P. Kennard, *The Russian peasant* (Phila., 1908), 42; Maurice G. Hindus, *The Russian peasant* (N. Y., 1920), 143.

EMANCIPATION: Mavor; W. D. Preyer, *Die russische Agrarreform* (Jena, 1914), 5 ff.; Wieth-Knudsen, 25 ff.; report by Michell, in *British parliamentary papers* (1870), 67:22-122; A. Daudé-Bancel, *La réforme agraire en Russie* (P., 1926), 24; *Handwörterbuch*, second ed., 2:413.

LARGE ESTATES: Michell's report, 54; Gerhart von Schulze-Gävernitz, *Volkswirtschaftliche Studien aus Russland* (Leipzig, 1899), 319 ff.; Alphons Thun, *Landwirtschaft und Gewerbe in Mittellusland* (Leipzig, 1880), 7 ff.; Samson-Himmelstjerna, 159 ff. (*Terpigoriev, Verlumpung des Adels*).

CHAPTER XXIII. ORGANIZATION OF RUSSIAN AGRICULTURE

COMMUNAL LAND TENURE: *Origin*: Kulischer, 238 ff.; Preyer, 12-15; Miliukov, 175, 192; Johannes von Keussler, *Zur Geschichte und Kritik des bäuerlichen Gemeindebesitzes in Russland*, 3 parts cited in 4 vols. (Riga and St. Petersburg, 1876-1887), 1:114 ff., 4:56 ff.; Simkhovitch, *Die Feldgemeinschaft in Russland* (Jena, 1898). *Workings*: Quotation from Leroy-Beaulieu, 1:475; examples from Keussler, 2:299 and Leroy-Beaulieu, 1:525; full account of lot groups in Keussler, 2:308 ff. *Land Divisions*: Preyer, 57; Wieth-Knudsen, 76, both with maps [maps also in A. Meitzen, *Siedlung und Agrarwesen*, Berlin, 1896, 2:221 and atlas]; full details in Keussler, 3:1-72. *Redistributions*: Keussler, 2:41; 3:5, 98 ff., 106 ff., 178 ff.; Thun, 111, 122.

APPRECIATION: August von Haxthausen, *Die ländliche Verfassung Russlands* (Leipzig, 1866), 415; M. Tugan-Baranowsky, *Geschichte der russischen Fabrik* (Berlin, 1900), 351; Faucher, in *Systems of land tenure*, ed. J. W. Probyn (L., 1876), 332. *Criticism*: Keussler, 3:8 ff.; Wieth-Knudsen, 81; Preyer, 56; Thun, 69, 73, 115; L. de Tegoborski, *Etudes sur les forces productives de la Russie* (P., 1854), 1:321; Alexander D. Bilimovich, *The land settlement in Alexis N. Antsiferov, Russian agriculture during the war* (New Haven, 1930) (Carnegie series), 315. Extracts from report of 1872 in Keussler, 2:39 ff. *Qualifications*: Wieth-Knudsen, 70, 77; Bilimovich, 313; Keussler, 2:47, 63, 136 ff., 3:52 ff., 4:210; Thun, 130; faults of over-large villages in Keussler, 3:44 ff., 4:211, cf. Thun, 62-63; small families in Keussler, 2:53 ff., and Isaac A. Hourwich, *The economics of the Russian village* (N. Y., 1892), 93, 121.

SOCIAL: Thun, 68, 130, 133, 147 ff.; E. B. Lanin [pseudonym of E. J. Dillon], in *Fornightly Rev.* (Feb., 1891), 55-188, 190, 195; Inostranietz, in *Jour. des Econ.* (1893), V:16, 233 ff.; Samson-Himmelstjerna, 72, 75; Hindus, 101; Hourwich, in *Yale Rev.* (1892-93), 1:428; I. S. Bloch, *Future of war* (N. Y., 1899), 205, quoting Sokolovski. *Political*: Leroy-Beaulieu, 2:4; Michell's report, 50; Daudé-Bancel, 28; Keussler, 2:44, 61; Thun, 149; Gogol, *Dead souls*, 1:40; Preyer, 63.

CHAPTER XXIV. THE RUSSIAN PEASANT

YIELD: *Internat. Stat. Year-book* (Geneva, 1928), 57. The table, from Antsiferov, 54, unfortunately does not specify the nature of the "grain" or "cereals" to which it refers. I have used the 60-pound bushel in getting equivalents of puds per dessiatine; this is too heavy for other grains than wheat, but the yields of other grains are higher. Early English yields in Frederick W. Maitland, *Domesday Book* and

beyond (Cambridge, 1897), 438; F. G. Davenport, Economic development of a Norfolk manor (Cambridge, 1906), 30; Hosebonderie, ed. E. Lamond, in Walter of Henley (Oxford, 1890), 71. Yield per seed, Thun, 36; per person, Ballod, in Schmoller's *Jahrbuch für Gesetzgebung* (1905), 29:853. Figures in Michell's report (1870), 71, from Hausner's statistics, would make the Russian yield of grain below that even of Spain and Greece. *Methods*: Michell's report, 75; Thun, 108; Hindus, 84 ff.; Daudé-Bancel, 59-60.

INCOME: Sergej Prokopowitsch, Ueber die Bedingungen der industriellen Entwicklung Russlands (Tübingen, 1913) [Archiv für Socialwissenschaft, Ergänzungsheft 10], 24 ff., with discussion of other estimates. *Taxes*: Prokopowitsch, 33, 82; Thun, 94; Miliukov, 165; Daudé-Bancel, 50; Hourwich, 32; Public Opinion, Sept. 16, 1905; Lanin [Dillon], in *Fortnightly Rev.* (Feb., 1891), 55:58. *Burdens*: Stepniak, in *Fortnightly Rev.* (1892), 57:364; Michell's report, 45; Hourwich, 33; Nicolai-On, *Die Volkswirtschaft in Russland nach der Bauern-Emancipation* (München, 1899), 2; Samson-Himmelstjerna, 69 ff.; Schulze-Gävernitz, 333-334; Lanin [Dillon], in *Fortnightly Rev.*, 55:187, 210. Wieth-Knudsen, 57 ff., thinks that the burden has been exaggerated, but is against the general opinion. *Arrears*: Table from Hindus, 105, citing Alexinsky; Daudé-Bancel, 49; Thun, 104 ff.

FAMINE: A. Heyking, Problems confronting Russia (L., 1918), 15; Lanin [Dillon], in *Fortnightly Rev.* (1891), 56:636-652; Bannerman, in *Westminster Rev.* (1902), 157:283 ff., Stepniak, 367; Shishkoff in *Nineteenth Century* (1892), 31:2; Hourwich, in *Yale Rev.* (1892-93), 1:433. *Housing*: Thun, 52, 78, 225 ff.; Kennard, 20 ff.; J. D. Rees, *Life in a Russian village, Nineteenth Century* (1894), 35:818; Lanin [Dillon], *Cholera and cleanliness in Russia, Fortnightly Rev.* (1892), 58:304. *Food*: Michell's report, 80 ff.; Kennard, 80, 226; Shishkoff, 2; Thun, 50 ff.; Rees, 821; Wieth-Knudsen, 65. *Drink*: Thun, 150 ff.; Samson-Himmelstjerna, 51 ff.; George Kennan, *Siberia* (N. Y., 1891), 2:329; Edmond Théry, *La transformation économique de la Russie* (P., 1914), 64 ff.; Heyking, 158-159. *Vital*: *Internat. Stat. Year-book*, 1927, 25; Daudé-Bancel, 46; *Statesman's Year-book*, 1901; 964; Hindus, 19; Bannermann, 286; Michell's report, 89. *Medical*: Wieth-Knudsen, 21; Samson-Himmelstjerna, 100, 155; Kennard, 228, 237; Bloch, 220-221. *Education*: *World Almanac* (1931), 789; *Econ. Rev.* (1914), 24:305; Kennard, 17, 244; *Lit. Digest* (Jan. 30, 1904, Oct. 28, 1905); Kennan, in *Outlook* (April 22, 1905); Miliukov, 123; *U. S. Commerce Year-book* (1930), 2:671; Hugo Ganz, *The land of riddles* (N. Y., 1904), 191; Gogol, *Dead souls*, 2:186; Thun, 55, 82; Hourwich, 12.

LAND: Table from Wieth-Knudsen, 40. For details see the important contribution by the director of the central committee of statistics, A. Zolotareff, *Propriété foncière . . . en 1905*, *Bull. Inst. Internat. Stat.* (1908), 17:176*-208*. I omit references to the polemics on

the adequacy of peasants' holdings. *Reform*: Théry, 20; Auhagen, in Max Sering, *Russlands Kultur und Volkswirtschaft* (Berlin, 1913), 135; Koefoed in Sering, 147 ff., Preyer and Wieth-Knudsen, *passim* [cf. the former's criticism of the latter in *Jahrbücher f. Nat.* (1914), 102:112-116, and Ballod's review of Preyer, in *Jahrbuch f. Gesetzgebung* (1914), 38:1645-1648]. For an account in English see R. T. Ely, in *Amer. Econ. Rev.* (March, 1916), 6:61-68.

CHAPTER XXV. RUSSIAN MANUFACTURE: EARLY FORMS

EARLY INDUSTRY: Kulischer, 299 ff.; Schulze-Gävernitz, 4 ff.; M. Tugan-Baranowsky, *Geschichte der russischen Fabrik*, 8 ff.; Miliukov, 106 ff. Table from Tugan-Baranowsky, 121, cf. 98. *Iron*: J. J. Oddy, *European commerce* (Phila., 1807), 1:73, 75. *Jakolew*: K. A. Pashitnow, *Die Lage der arbeitenden Klasse in Russland* (Stuttgart, 1907), 258. Statistics about 1850 from L. de Tegoborski, *Forces productives*, 1:317, 2:227, 358, 3:244 ff.

KUSTAR: Moratchesky in W. de Kovalevsky, *La Russie à la fin du 19e siècle* (P., 1900), 538 ff.; Tugan-Baranowsky, *passim*; Thun, 155 ff., 207 ff.; Miliukov, 114. Quotation and table from Thun, 175, 208.

CHAPTER XXVI. RUSSIAN FACTORY INDUSTRY

General references as in the preceding chapter. Schulze-Gävernitz gives an admirable analysis of the economic conditions of manufacture, and Pashitnow supplies full details from official sources on the condition of labor.

CONDITIONS, 1861 ff.: F. Matthäi, *Der auswärtige Handel Russlands* (St. Petersburg, 1874), 107; Iwan Golowin, *Russland unter Alexander II* (Leipzig, n. d.), 143 ff.; Kurt Schweikert, *Die Baumwollindustrie Russisch-Polens* (Zurich, 1913), 175, 331; Kurt Wiedenfeld, *The remaking of Russia* (L., 1924), 6; V. Wittschewsky, *Die russische Zoll- und Handelspolitik* (Leipzig, 1902), 434.

LABOR: Pashitnow, *passim*; Thun, 226; Report of Stanton, Consul General at St. Petersburg, Aug. 1, 1884, in *Labor in Europe* (Washington, 1885), 2:1444; Andrew D. White, *Autobiography* (N. Y., 1905), 2:54; Chapman, *Work and wages*, 1:153; Francis D. Longe, *A refutation of the wage-fund theory* (L., 1866), 60; Schoenhof, in *Forum* (1901), 31:96; *American Machinist* (1904), 27:1:582; E. M. Dementjeff, in *Braun's Archiv für soziale Gesetzgebung* (1889), 2:533 ff.; Report of Geoffrey Drage, in *Royal Commission on Labour* [C. 7063 xiv], 1894.

CONDITIONS ABOUT 1900: Statistics from Théry, 88, and Pub. Amer. Stat. Assoc. (1912), 13:276. *Legislation*: Tugan-Baranowsky,

459 ff.; Goebel, in Sering, 194; N. von Nolcken, Aus den Erinnerungen eines russischen Fabrikinspektors, Schmoller's Jahrbuch für Gesetzgebung (1908), 32:1711 ff. *Wages and Living*: Sergei Prokopowitsch, Haushaltungs-Budgets Petersburger Arbeiter, Archiv für Sozialwissenschaft (1910), 30.66-99; Goebel, in Sering, 198 ff.; Econ. Rev. (1914), 24:305; S. Patkanow, Etat actuel des lieux habités urbains de l'Empire de Russie, Bull. Inst. Internat. Stat. (1908), 17:11:430*-443*.

ORGANIZATION: Statistics from Prokopowitsch, Bedingungen der industriellen Entwicklung, 19, 23; Deutsches Handelsarchiv (1914), 1:354-355. *Organization*: Goebel, in Sering, 186 ff.; Schweikert, 295. *Profits*: Schulze-Gävernitz, 273 ff.; Lanin [Dillon], in Fortnightly Rev. (1891), 55:183; Goebel, 201. *Criticism*: Prokopowitsch, 83; Goebel, 199.

CHAPTER XXVII. THE RUSSIAN REVOLUTION

Books from which items are so often cited that it would be tedious to multiply references are the following, in the order of date of publication: K. Leites, Recent economic developments in Russia (Oxford, 1922) (Carnegie series); S. N. Prokopovitch, Economic conditions of soviet Russia (L., 1924) [valuable statistics]; James Mavor, The Russian revolution (L., 1928) [detailed chronological narrative]; Maurice Dobb, Russian economic development since the revolution (L., 1928) [keen economic analysis]; William H. Chamberlin, Soviet Russia (Boston, 1930); A. Yugoff, Economic trends in soviet Russia (N. Y., 1930); Calvin B. Hoover, Economic life of soviet Russia (N. Y., 1931).

POLITICAL: Issac D. Levine, Russian revolution (N. Y., 1917), 56 ff.; A. Heyking, Problems confronting Russia (L., 1918), 20; Albert R. Williams, Lenin (N. Y., 1919), 34; Schmoller's Jahrbuch für Gesetzgebung (1924), 47: 143; Wiedenfeld, 14. *Soviets*: John Spargo, Greatest failure in all history (N. Y., 1920), 12 ff., 204 ff.; A. Ransome, Russia in 1919 (N. Y., 1919), 71 ff., and Crisis in Russia (L., 1921), 77; Bertrand Russell, Practice and theory of Bolshevism (L., 1920), 72.

NATIONALIZATION: Les conditions du travail dans la Russie des soviets, Questionnaire, in France, Bull. Min. Travail (July, 1920), 27:299 ff.; Wiedenfeld, 84, 108; J. M. Keynes, Laissez-faire and communism (N. Y., 1926), 104; A. A. Heller, Industrial revival in soviet Russia (N. Y., 1922), passim; Spargo, 208, 227; Ransome, Crisis, passim; Report of American Trade Union Delegation, Russia after ten years (N. Y., 1927), 39.

AGRICULTURE: Antsiferov, 22, 45, 117 ff.; A. Daudé-Bancel, La reforme agraire en Russie (P., 1926), 78 ff.; Spargo, 69 ff., 104 ff.; Econ. Rev. of Foreign Press (April 15, 1921), 3:408; M. Farbman, Piatiletka (N. Y., 1931), 125.

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NEP: Spargo, 128 ff., 298; Heller, 44, 90, 103; Farbman, 6; Association financière . . . Russe, La débacle des soviets (P., 1922), 81 ff., 106; Econ. Rev. of Foreign Press (Nov. 19, 1926) [wages]; Report Amer. T. U. Delegation, 14, cf. Vernadsky, 286.

CHAPTER XXVIII. RUSSIA UNDER FIVE-YEAR PLANS

FIVE-YEAR PLANS: *General*: Ch. Bettelheim, La planification soviétique (P., 1939); A. Abramson, Economic development of the Soviet Union under the second and third . . . plans, in Internat. Labour Rev. (Feb., 1940), 41:177-201. These are invaluable for their statistical and other material from official sources, and are used widely in the text.

FIRST PLAN: General references in addition to those above, W. H. Chamberlin, The soviet planned economic order (Boston, 1931); M. Farbman, Piatiletka: Russia's five year plan (N. Y., 1931); G. T. Gringko, The five year plan (N. Y., 1930); The soviet union looks ahead (N. Y., 1929) [the last two Bolshevik]. In particular, Econ. Rev. of Foreign Press (Nov. 19, 1920), 3.30 [Goldstein's estimate of capital]; Russell, 87; Hugh L. Cooper, Address at Engineers' Club, N. Y., Feb. 10, 1931.

RESULTS: *Agriculture*: Daudé-Bancel, 82 ff., 109 ff.; Prokopovitch, in Econ. Rev. of Foreign Press (July 2, 1926); Vernadsky, 288; Auhagen, summarized in Soc. Sci. Ab. (1930), No. 1473. Most of the facts in the text are cited from the general references above. *Manufacture*: Abramson, 188.

SECOND PLAN: State Planning Commission, The second five year plan (printed in Russia, N. Y., Internat. Publishers, 1937, cited hereafter as Second plan). *Transformation*: Second plan, xv; Abramson, 180. *Agriculture*: Second plan, xxxiii, xliii; League of Nat., Mo. Bull. Stat. (July, 1939), 20:266, 324; Winterton, 444; quotation from Abramson, 182. *Motives*: Bettelheim, 152 ff., an elaborate analysis; Second plan, xix; Internat. Labour Rev. (July, 1936), 34:5-33. *Transportation*: Bettelheim, 299 ff.; Second plan, 349 ff.

THIRD PLAN: Abramson, 191, 200, figures for 1913 from Utley; her figures for 1932-37 differ by inconsiderable amounts from Abramson's. *Standard*: Clark, 51; Bettelheim, 315; Second plan, xliv; Internat. Labour Rev. (Mar., 1933), 27:353; Abramson, 179, 196 ff.; cf. Utley, 395 ff. for criticism.

CHAPTER XXIX. ITALY

EARLY: *Leghorn*: Reumont, Gesch. Toscana's (Gotha, 1876), 1:370, 509; 2:43. *Grain*: Wm. Naudé, Getreidehandelspolitik d. eur Staaten (Berlin, 1896), 142 ff.

AFTER 1800: R. Morandi, *Storia della grande industria in Italia* (Bari, 1931), 41 ff.; W. Sombart, *Handelspolitik Italiens* (Leipzig, 1892), 78 ff.; Greenfield, 71. *South*: M. Santoro, *L'Italia nei suoi progressi econ.* (Rome, 1911), 20 ff.; *Cambridge mod. hist.*, 10:110. *Statistics from Bull. Stat. Gén. de la France* (Oct., 1928), 18:105.

LAND TENURES: *Mezzadria*: E. Demontes, *La question agraire* (Beaugency, 1923), 157 ff. *South*: G. Bernardi in *Schmoller's Jahrbuch* (1882), 6:666 ff.; Nitti in *Econ. Rev.* (1893), 3:364 ff.; Goyau in *Rev. Deux Mondes* (1898), 1:80 ff.; R. Foerster, *Italian emigration* (Cambridge, Mass., 1919), 65 ff.; quotations from *Brit. Parl. Pub.* (1871), Cd. 271, 23, 67. *Anarchism*: Fiamingo in *Contemp. Rev.* (1900), 78:339.

MANUFACTURE: Hearn, *Plutology* (L., 1864), 49; E. Lémonon, *L'Italie éc. et soc.* (P., 1913), 32; Sombart, 142 ff.; Morandi, 135 ff.; W. Clark, *Cotton textile trade in . . . Italy*, Report to Bur. of Manufactures (Wash., 1908), 92. *Labor*: *Labor in Europe*, reports of U. S. Consuls (Wash., 1885), 1522, 1563, 1582; Lord in *Nineteenth Cent.* (1892), 31:371; Bernardi, 673 ff.

POLITICAL: Okey in *Contemp. Rev.* (Dec., 1913), 104:772 ff.; Digny in *Nuova Antol.* (1900), 172:74. *Taxes*: Einaudi in *Econ. Journ.* (1915), 25:504; Ghio in *Jour. des Econ.* (1899), 40:67 ff.; Foerster, 89 ff.; Tangorra in *Gior. d. Econ.* (1901), II, 23:33. *Revolts*. Enn. Morel, *La crise actuelle* (Lyons, 1894), and Italian journals above, 1894 ff. *Improvement*: Clark, 67 ff.; Morandi, 187 ff.; Digny, 54; Ferraris in *Nuova Antol.* (1901), 177:733; Pawlowski in *Jour. d. Econ.*, Apr., 1913.

FASCISM: F. Pitigliani, *Italian corporative state* (L., 1933), viii; Welk, 38. *Tendencies*: Summary in *Foreign Affairs* (July, 1926), 4:668; Ebenstein, 214; C. Hamilton, *Modern Italy* (L., 1932), 173; McGuire, 456.

RESULTS: *Ann. Stat. Ital.*, 1927, 318; 1939, 71 ff.; (figures differ slightly from Schmidt's); L. Rosenstock-Franck, *L'économie corporative* (P., 1934), 154 ff.; C. Haider, *Capital and labor* (N. Y., 1930), 155 ff. *Wheat*: statistics from Welk, 195, and *Internat. Inst. of Agr., Stat.*, 1935-37, xxv, 858; estimate from Salvemini in *Pol. Sci. Quart.* (March, 1931), 46:40.

MANUFACTURE: Morendi, 250, 261; D. T. Farnham, *America vs. Europe* (N. Y., 1921), 44; U. S. Commerce Year Book, 1926, 2:324, 331; *Rev. Econ. Internat.*, Oct., 1929, Feb., 1932. *Government*: Haider, 141, 191; Rosenstock-Franck, 163, 184, 203; Pitigliani, 56 ff.; G. Field, *Syndical and corporative institutions* (N. Y., 1938), 133. *Wages*: *Econ. Rev. of Foreign Press* (March, 1922), 5:402; *Internat. Labour Rev.* (Jan., 1927), 15:98 ff., cf. *ib.* Oct., 1930, cited by Ebenstein.

SOCIAL: Salvemini, 284 ff.; 346 ff.; Ebenstein, 166, 179, 186; Rosentock-Franck, 209 ff.; Welk, 183; cf. Hamilton, 95.

CHAPTER XXX. SPAIN TO 1800

EARLY: Marvaud, *L'Espagne* (P., 1915), 290 ff.; P. Boissonade in *Rev. Syn. Hist.* (1911), 22:214 ff.; E. Lévi-Provençal, in *Rev. Hist.* (1931), 167: 305-323. *Conditions*: R. Leonhard, *Ureigentum*, in *J. f. Nat.* (1911), 96:32 ff.; P. Boissonade in *Rev. Syn. Hist.* (1911), 23:339, 393; Bonn (see below), 50 ff., following Cardenas; Hamilton, Money (see below), 193.

1500 ff.: Detailed references omitted generally to the following: M. J. Bonn, *Spaniens Niedergang* (Stuttgart, 1896); K. Häbler, *Wirtschaftliche Blüte Spaniens* (Berlin, 1888); M. Colmeiro, *Historia de la economia politica en España* (Madrid, 1863); E. J. Hamilton, *American treasure* (Cambridge, Mass., 1934); *id.*, Money, prices and wages (*ib.*, 1936); M. Ansiaux, *Hist. écon. de l'Espagne*, in *Rev. d'Ec. Pol.* (1893), 7:509-566, 1025-1059. On agriculture, R. Leonhard, *Agrarpolitik und Agrarreform in Spanien* (München, 1909), 71 ff. *Population*: above and A. Girard in *Rev. d'Histoire Moderne* (1928), 3:430; (1929), 4:3 ff.; Boissonade, 341 ff. *Manufacture*: Girard, 4:11; Colmeiro, 2:199, 230; quotation from Thorold Rogers in *Princeton Rev.* (Jan., 1879), 55:230. *Finance*: Bonn, Häbler, Ansiaux; B. de Ulloa, *Retablissement des manufactures* (Amsterdam, 1753), 1:21 ff., 47 ff., 133; G. de Ustariz, *Théorie et pratique du commerce* (P., 1753), *5. *Mesta: forestry*: J. Klein, *The Mesta* (Cambridge, Mass., 1920); Leonhard, 250, 296 ff.; Boissonade, 350. *Political*: Chapman, *History*, 273; Ansiaux, above; A. Girard, *L'Espagne à la fin du xviiè siècle*, *Rev. Syn. Hist.* (Feb., 1913), 26:102, 107; Leonhard, *Agrarpol.*, 41. *Manufacture*: Colmeiro, 2:204 ff.; Girard, *L'Espagne*, 105 ff. *Land*: Leonhard, 43 ff.; 187, 246; Colmeiro, 2:132, 145; Bonn, 118, 161. *Church*: Leonhard; Colmeiro, 2:155 ff. *Yield*: Leonhard, 61 ff., 105; W. Webster, *Spain* (L., 1882), 41; J. Townsend, *Journey* (L., 1792), end plates of vol. 3.

CHAPTER XXXI. SPAIN SINCE 1800

AGRICULTURE: Population statistics from Marvaud, *L'Espagne*, 380-1. *Land tenure*: F. Cardenas, *Ensayo sobre la hist. de la propiedad territorial* (Madrid, 1873-5), 2:169 ff.; Colmeiro, 2:131; P. Carrión, *Los latifundios en España* (Madrid, 1932), 296 ff.; British Parliamentary Pub., Cd. 271, 1871, 67:18 ff. Statistics from Carrión, table opp. p. 86; see p. 67 ff. (and errata) for other figures; 47 ff. for cadastral methods. Figures for southwest from *Anuario Estadístico*, 1934, p. 211, rearranged. *Great estates*: A. Marvaud, *La réforme agraire en Espagne*, *Rev. Econ. Internat.* (1933), 25:2:568 ff.; Carrión, 321, 347; Leonhard, 62. *Labor*: A. Marvaud, *La question sociale en Espagne* (P., 1910), 136 ff., 168; *id.*, *Ref. agraire*, 566; Carrión, 19, 313, 365; Condi-

tions of agr. workers, in *Internat. Labour Rev.* (June, 1929), 19:868 ff.; Laveleye in *Systems of land tenure*, ed. J. W. Probyn (L. 1876), 486. *Small holdings*: Marvaud, *Question*, 154 ff.; F. Rios, *Agr. problem in Internat. Labour Rev.* (1925), 11:842 ff.; British report of 1871, p. 20.

MINING: Marvaud, *L'Espagne*, 306 ff.; Webster, 67. *Manufacture*: Marvaud, 315 ff. and in *Rev. Sci. Pol.* (Oct. 1920), 43:487; E. J. Dillon in *Contemp. Rev.* (1898), 74:320. *Labor*: Labor in Europe, reports from U. S. consuls (Wash., 1885), 1345-1441; Marvaud, 319, 383; F. B. Deakin, *Spain today* (L., 1924), 113, 118.

POLITICAL: Dillon in *Contemp. Rev.* (1898), 73:876 ff. and 74:314; J. Foreman in *Nat. Rev.* (1897), 29:726 ff.; L. Holland, *ib.* (1901), 36:906; L. Higgin, *Spanish life* (N. Y., 1902), 145, 151; Deakin, 69, 84, 94; Webster, iii, 170; Marvaud, 193 ff., 243. *Conditions*: contemporary periodicals above and *Fortnightly Rev.* (1921), 115:738, 742. *Income*: Vandellós in *Metron* (Dec., 1925), 5:151-186; Clark in *Weltwirt. Archiv* (1938), 47:60. *Opposition*: Marvaud in *Rev. Sci. Pol.* (Oct., 1931), 54:492-521; (Oct., 1936), 59: 555-603. *Agrarian*: Marvaud as above and *Réforme agraire*, 569 ff.; *Internat. Labour Office, Studies*, K., no. 2, Geneva, 1920; Carrión, 391; *Anuario Estad.*, 214; text of law in *Internat. Inst. of Agric., Législation agric.* (1932), 22:1277-1305.

CHAPTER XXXII. IRELAND TO 1800

My obligation to M. J. Bonn, *Die englische Kolonisation in Ireland*, 2 vols. (Stuttgart, 1906), is so great that reference on almost every page could be made to it. For Sir William Petty I have used the edition by Hull (Cambridge, 1899); for Arthur Young's *Tour* that by Hutton (L., 1892).

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Labour migration (Manchester, 1926), 138; G. Hill, *Facts from Gweedore* (Dublin, 1846). *Results*: O'Brien, 1918, 24 ff.; Longfield, 31; D. A. Chart, *Ireland* (L., 1910), 148; Plunkett, 113. *Ulster*: Martens, 7; Longfield, 34 ff.; Gill, 23 ff.

CHAPTER XXXIII. IRELAND SINCE 1800

In this period I have continued to rely largely on Bonn, with occasional details from O'Brien and Chart. For the land laws I have drawn on Martens and on W. A. Dunning, *Irish land legislation*, *Pol. Sci. Quart.* (1892), 7:57-79, 500-521.

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